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1947-53

STATE DOCUMENTS

Fourteenth Report
1947-1953
OFFICE OF
THE STATE FORESTER

Including

STATE BOARD OF FORESTRY
RURAL FIRE FIGHTERS SERVICE

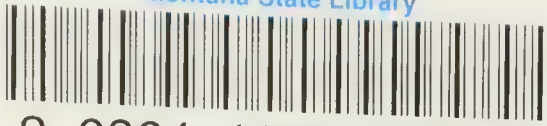
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To

HONORABLE J. HUGO ARONSON
GOVERNOR

State of Montana

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Fourteenth Report

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STATE BOARD OF FORESTRY
RURAL FIRE FIGHTERS SERVICE
STATE PARK COMMISSION

To

HONORABLE J. HUGO ARONSON
GOVERNOR

State of Montana

LETTER OF TRANSMITTAL

February 27, 1954

Forestry School Building

Montana State University

Missoula, Montana

Honorable J. Hugo Aronson

Governor State of Montana

Helena, Montana

Dear Governor Aronson:

In accordance with the statutes of the State of Montana, there are transmitted herewith to you reports covering a six-year period concerning the activities of the Office of the State Forester, the State Board of Forestry, the Rural Fire Fighters Service, and the State Park Commission.

Very respectfully yours,

RUTLEDGE PARKER, State Forester

OFFICE OF THE STATE FORESTER

General Statement Covering the Years 1947-1953

The tremendous demand for timber that was accelerated by World War II did not slow down during the period of which this report is written. The Office of the State Forester devised an over-all plan that would permit the annual cutting of thirty million board feet, log scale, for a period of 80 to 100 years. The plan was to harvest the mature and over-mature timber for commercial purposes. This would then leave the young trees for a second cutting in a matter of years.

These well-laid plans were, of necessity, set aside when the demand for lumber was accelerated during the conflict in 1941. The cut was materially increased, with the maximum cut reaching 106 million board feet log scale in 1951.

Prior to this demand, the law enacted in 1909 established a minimum stumpage rate on state timber at \$3.00 per M ft. This was approximately the price received by the state for its stumpage. Due to the low economic level in the United States in the 30's this rate was decreased to \$1.50 per M ft. on fir and larch, by an amendment to this Act in 1931. However, as demand became more intense, bids on state timber went upwards until now the average sale of ponderosa pine is about \$20.00 per M ft.

During the period when much logging was being performed on state lands, the Legislature did not appropriate sufficient funds to allow sufficient supervision by the Office of the State Forester. Trained personnel was not only difficult to secure, but the salary scale being lower than Industry, made it difficult to retain qualified men to do the job. To supervise forest cutting it is necessary for the State Forester to employ adequately trained men to:

1. Mark the timber for cutting.
2. Supervise the area being logged to safeguard advance growth.
3. Supervise in the disposing of the slash hazards created during logging operations.
4. Observe areas for possible epidemics of insect infestation.

The heavy drain on the State of Montana for lumber practically depleted the virgin timber of the small forest land owner. This, of course, created a great demand for federal and state-owned timber, and consequently heavier cuts were made than would have been feasible according to the original plan set down by the Office of the State Forester for state-owned lands. It is to be noted, however, that the prices received gave the endowment funds a build-up to a never-dreamed of revenue. However, it did not assist in establishing the best forest practice for the reasons outlined above.

This emergency called for suggestions to protect the future timber holdings, and the following recommendations were approved by the State Board of Land Commissioners on February 13, 1946:

- 1: That there should be no definite limitation on the volume of state timber to be sold at the present time, unless the demand goes beyond the capacity of the members of this department's personnel to give adequate supervision to the timber sale operations. The volume of timber, therefore, to be sold shall be determined on the basis of the funds and manpower available to do the job.

2. That if the annual cut on State lands is going to continue around seventy million board feet log scale, then every care should be exercised to fully utilize the mature and over-mature timber and leave all available capital stock in the form of comparatively young rapid growing trees in order to insure a second crop at the earliest possible time. Trained men will be required for marking the trees to be cut that include this stupendous volume of timber.
3. That no valuable commercial sawlog timber stands be sold to pulpwood operators to be shipped out of the State. The primary reason for this is the urgent need for lumber in the State and Nation, and also to provide employment to our home workers in the manufacture of lumber.
4. That such timber stands as lodgepole pine, alpine fir, cottonwood and inferior stands of other species having little or no value for the manufacture of lumber be sold to pulpwood operators to be shipped outside of the State.
5. That the State Forester's office be given authority to determine for each individual application for pulpwood the action to be taken which is thought to be to the best interest of the State, provided the general policy as previously stated will be followed.

Another suggestion was offered by the State Forester but the State Land Board did not approve it at this time, their reason being that due to the shortage of lumber, no State owned timber be manufactured into railroad ties. The recommendation was adopted however, at the meeting of the Land Board on January 12, 1949, to-wit:

That all tie-mill operators purchasing State timber fully utilize the saw-timber for ties and lumber so as to cause the least possible waste, a clause to this effect to be inserted in each contract of sale.

Due to the heavy logging on State land, and with the lack of State personnel to supervise these operations, the situation at hand is that many of the areas require additional labor to assure normal reproduction. The lack of funds to properly administer this work continued until June 30, 1953 (fiscal year 1954) when appropriations were of sufficient stature to meet the requirements of the job.

The status of the state-owned forests in Montana poses many problems which are enumerated below:

1. The State has remaining something over one billion board feet log scale of virgin timber stands. The period over which this timber will be cut will depend upon the demand, or whether restrictions are applied which would limit the cut. The economics of the situation would require reasonably rapid cut of the mature and over-mature timber so that the funds would be made available for investment. This would leave the area in a better productive condition and eliminate the danger of attack by insects and other diseases.

2. Some of the areas included within the ponderosa pine type contain practically all mature and over-mature trees which will serve no useful purpose if left. These areas range from 2 to 10 acres or more. Under the circumstances they should be planted in order to increase their productivity. In some other areas the cut was heavy and in some instances there is a shortage of seed trees. Some artificial planting in these instances will suffice. In all such instances, natural regeneration is not satisfactory.

3. A start was made to make an accurate forest survey of the State's virgin timber stands about 32 years ago. That survey was completed 15 or 20 years ago. No forest survey has been made, however, covering the areas from which the virgin stands have been cut. An inventory of the resource on these areas should be made. See recommendations in this report regarding this item.

4. The State owns many scattered areas of 640 acres or less. Repeated recommendations have been made to consolidate these areas through exchange with other forest owners, with no success to date. Practically all of these areas are located in organized fire protection districts and the State has had the privilege to list them under an agreement for fire protection with the agencies in whose territory these lands are located. From the standpoint of administration it would be a big advantage to have these lands consolidated. It would be advantageous in making timber sales as these lands are not in large blocks. It would mean that the State official having charge of this particular area could make his residence within a reasonable distance of the area and could more efficiently administer it and it would cost the State very much less than administering the scattered areas.

RECOMMENDATIONS

1. It would be very advantageous to the State in the event State timber sale business for fiscal years 1956 and 1957 should be reduced, that the funds appropriated during the present biennium be continued in like amount so the balance not consumed by timber sales could be used for an inventory program as outlined in caption 2.

2. It is essential that an inventory be made of the forest resources remaining on the State owned lands from which the mature stands of timber have been harvested, for the following reasons:

- (a) To determine the extent to which these areas are productive.
- (b) To provide the data for the preparation of an artificial tree planting program.
- (c) Such a program to apply only in the ponderosa pine type on the best sites, and where the productivity would be increased.
- (d) That no start be made on any extensive planting program until the inventory job is completed.
- (e) A reforestation plan such as tree planting should be accomplished under a public works program when ample labor is available.

3. Some of the State-owned timber was cut in the early 90's. Many of the section lines marking these early cuttings have been obliterated. These lines should be re-run and marked so they will be clearly designated.

4. After the inventory has been completed a stand improvement plan should be prepared and a start be made to increase the productivity of the forest on areas where there is found a need for such action.

5. State and Federal laws now on the statutes authorize the exchange of State-owned lands. The administration of some 314,000 acres of scattered land is an extremely difficult problem. These lands should be consolidated into blocks of sufficient size so that they can be administered efficiently and economically.

6. A revised printed pamphlet covering the forestry laws has been printed. There are some conflicting irregularities in some of the forest protection laws which were passed in 1919 and earlier with those that were enacted at a later

period. Notes calling attention to these discrepancies have been inserted in the booklet. A careful study should be made with the object of securing uniformity and coordination.

7. Authority should be given to extend the forest fire season from 30 to 60 days. This will take care of any bad fire weather prior to the opening of the established fire season or subsequent to the closing of such season.

8. An amendment to the law designating the State Forester should be considered so that he be a graduate of an accredited school of forestry and have a satisfactory field record in the practical principles of forestry.

STATE FOREST DEPARTMENT STATEMENT OF APPROPRIATIONS AND EXPENDITURES

July 1, 1946 Through June 30, 1953

F. Y. 1947

Appropriations 7/1/46 through 6/31/47.....	\$ 46,337.00
Carried forward from F. Y. 1946.....	2,195.11
	\$ 48,532.11

Expenditures 7/1/46 through 6/31/47

Administration	\$ 9,079.69
Capitol, Repairs and Replacements.....	1,156.00
Operation	690.55
Protection of State Lands.....	21,850.98
Timber Sales	15,747.57

48,524.79

Reverted to General Fund..... 7.32

\$ 48,532.11 \$ 48,532.11

F. Y. 1948

Appropriation 7/1/47 through 6/31/48.....	\$ 55,215.00
Expenditures 7/1/47 through 6/31/48	

Administration	\$ 9,800.00
Capitol, Repairs and Replacements.....	437.67
Operation	1,123.38
Protection of State Lands.....	20,640.92
Timber Sales	21,906.88

53,908.85

Carried forward to F. Y. 1949..... 1,306.15

\$55,215.00 \$ 55,215.00

F. Y. 1949

Appropriation 7/1/48 through 6/30/49.....	\$ 55,215.00
Carried forward from F. Y. 1948.....	1,306.15

56,521.15

Expenditures 7/1/48 through 6/1/49

Administration	\$ 9,800.00
Capitol, Repairs and Replacements.....	2,080.47
Operation	1,161.66
Protection of State Lands.....	21,355.32
Timber Sales	22,089.81

56,487.26

Reverted to General Fund.....	33.89	
	<u>\$ 56,521.15</u>	<u>\$ 56,521.15</u>
F. Y. 1950		
Appropriation 7/1/49 through 6/30/50.....		\$ 92,670.00
Expenditures 7/1/49 through 6/30/50		
Administration	\$ 16,599.22	
Capitol, Repairs and Replacements.....	149.94	
Operation	1,300.26	
Protection of State Lands.....	25,031.97	
Timber Sales	37,029.69	
Forest Nursery	6,613.24	
	<u>86,724.32</u>	
Carried forward to F. Y. 1951.....	5,945.68	
	<u>\$ 92,670.00</u>	<u>\$ 92,670.00</u>
F. Y. 1951		
Appropriation 7/1/50 through 6/30/51.....		\$102,205.50
Carried forward from F. Y. 1950.....		5,945.68
		<u>108,151.18</u>
Expenditures 7/1/50 through 6/30/51		
Administration	\$ 16,600.56	
Capitol, Repairs and Replacements.....	\$ 2,131.81	
Operation	10,509.55	
Protection of State Lands.....	28,959.32	
Timber Sales	42,148.44	
Forest Nursery	7,386.76	
	<u>107,736.44</u>	
Reverted to General Fund.....	414.74	
	<u>\$108,151.18</u>	<u>\$108,151.18</u>
F. Y. 1952		
Appropriation 7/1/51 through 6/30/52.....		\$103,212.00
Expenditures 7/1/51 through 6/31/52		
Administration	\$ 18,300.00	
Capitol, Repairs and Replacements.....	1,850.03	
Operation	3,018.56	
Protection of State Lands.....	25,285.85	
Timber Sales	41,900.35	
Forest Nursery	6,999.31	
	<u>97,354.10</u>	
Carried forward to F. Y. 1953.....	5,857.90	
	<u>\$103,212.00</u>	<u>\$103,212.00</u>
F. Y. 1953		
Appropriation 7/1/52 through 6/31/53.....		\$102,712.00
Carried forward from F. Y. 1952.....		5,857.90
		<u>108,569.90</u>

Expenditures 7/1/52 through 6/30/53

Administration	\$ 18,300.00
Capitol, Repairs and Replacements.....	1,649.97
Operation	3,021.44
Protection of State Lands.....	36,408.15
Timber Sales	42,189.15
Forest Nursery	7,000.69

108,569.40

Reverted to General Fund..... .50

108,569.90

\$108,569.90

RECEIPTS OF TIMBER SOLD AND LAND RENTALS ON STATE FOREST LAND

Fiscal Years 1947-1953, Inclusive

Fiscal Year	Timber Sales	Timber Permits	Land Rentals	Totals
1947.....	\$ 267,709.44	\$ 45,804.89	\$11,398.63	\$ 324,912.96
1948.....	438,094.70	32,447.32	14,656.29	485,198.31
1949.....	411,606.13	39,225.38	10,646.97	461,478.48
1950.....	385,455.16	54,547.41	11,618.04	451,620.61
1951.....	1,045,572.26	63,924.12	11,708.81	1,121,205.19
1952.....	1,119,791.98	96,839.52	15,423.11	1,232,054.61
1953.....	1,054,367.12	103,057.74	17,603.99	1,175,028.85
TOTALS	\$4,722,596.79	\$435,846.38	\$93,055.84	\$5,251,499.01

When the income has been received from all State timber contracts now in progress, it will bring the total income received by the Department of forestry since the Enabling Act, to a figure of approximately ten million dollars.

Of this total, about three hundred thousand dollars will be received from land uses (termed "land rentals"). These are classed as income funds of which ninety percent is allocated to the schools and other state institutions. The remaining ten percent is invested in the permanent fund.

The remaining portions of the funds received from the sale of timber and permits are designated as permanent funds, of which only the interest from these moneys may be expended by the various institutions that hold the lands in trust.

SPECIES OF SAWTIMBER CUT BY COUNTIES

Fiscal Year 1947 through Fiscal Year 1953

SAWTIMBER CUT BY COUNTIES FISCAL YEAR 1947:

County	Ponderosa Pine M. ft.	Fir and Larch M. ft.	Spruce M. ft.	White Pine M. ft.	Lodgepole Pine M. ft.	Grand Fir M. ft.	Cedar M. ft.	Total M. ft.
Flathead	3,633	19,486	1,666	113	85	.....	.....	24,983
Sanders	13,271	4,807	201	2	.....	.....	.....	18,281
Lincoln	756	9,818	535	58	.....	.....	.....	11,167
Ravalli	6,270	2,159	.....	.....	.....	.....	.....	8,429
Lake	463	1,387	164	38	25	.....	4	2,081
Mineral	1,717	673	.....	.....	.....	.....	.....	2,390
Missoula	478	873	20	.....	.....	.....	.....	1,371
Lewis and Clark	1,009	315	.....	.....	.....	.....	.....	1,324
Powell	17	111	.....	.....	.....	.....	.....	128
TOTALS	27,614	39,629	2,586	211	110	.....	4	70,154

SAWTIMBER CUT BY COUNTIES FISCAL YEAR 1948:

County	Ponderosa Pine M. ft.	Fir and Larch M. ft.	Spruce M. ft.	White Pine M. ft.	Lodgepole Pine M. ft.	Grand Fir M. ft.	Cedar M. ft.	Total M. ft.
Flathead	4,253	26,335	2,060	520	50	70	.....	33,288
Sanders	18,317	9,763	179	.....	.....	.....	.....	28,259
Lincoln	1,941	3,873	169	5	2	.....	.....	5,990
Ravalli	1,673	420	.....	.....	22	.....	20	2,093
Lake	35	215	3	.....	.....	.....	.....	295
Mineral	1,445	549	2	6	.....	.....	.....	2,002
Missoula	1,058	682	.....	.....	.....	.....	.....	1,740
Lewis and Clark	516	165	.....	.....	.....	.....	.....	681
Sweetgrass	107	.....	.....	.....	.....	.....	.....	107
Carter	79	.....	.....	.....	.....	.....	.....	79
Musselshell	60	.....	.....	.....	.....	.....	.....	60
TOTALS	29,484	42,002	2,413	531	74	70	20	74,594

SAWTIMBER CUT BY COUNTIES FISCAL YEAR 1949:

County	Ponderosa Pine M. ft.	Fir and Larch M. ft.	Spruce M. ft.	White Pine M. ft.	Lodgepole Pine M. ft.	Grand Fir M. ft.	Cedar M. ft.	Total M. ft.
Flathead	25,769	2,599	3,142	867	142	242	23	32,784
Sanders	10,470	16,809	66	.....	.....	.....	.....	27,345
Lincoln	2,268	260	83	.....	23	.....	.....	2,634
Ravalli	293	1,149	.....	.....	.....	.....	.....	1,442
Lake	71	62	.....	.....	.....	.....	.....	133
Mineral	739	2,392	10	5	.....	.....	.....	3,146
Missoula	1,568	2,055	864	.....	.....	.....	.....	4,487
Lewis and Clark	111	291	.....	.....	.....	.....	.....	402
Powell	43	88	.....	.....	.....	.....	.....	131
Musselshell	.....	105	.....	.....	.....	.....	.....	105
Granite	3	.....	.....	.....	.....	.....	.....	3
TOTALS	41,335	25,810	4,165	872	165	242	23	72,612

SAWTIMBER CUT BY COUNTIES FISCAL YEAR 1950:

County	Ponderosa Pine M. ft.	Fir and Larch M. ft.	Spruce M. ft.	White Pine M. ft.	Lodgepole Pine M. ft.	Grand Fir M. ft.	Cedar M. ft.	Total M. ft.
Flathead	1,064	10,930	2,220	255	138	132	20	14,759
Sanders	14,901	10,511	22	.....	.....	14	.....	25,448
Lincoln	971	3,689	376	.....	38	.....	.....	5,074
Ravalli	1,206	691	.....	.....	.....	.....	.....	1,897
Lake	126	219	.....	.....	.....	.....	.....	345
Mineral	2,178	492	.....	3	.....	.....	.....	2 673
Missoula	3,706	6,388	1,553	.....	.....	.....	.....	11,647
Lewis and Clark	811	97	.....	.....	.....	.....	.....	908
Musselshell	100	.....	.....	.....	.....	.....	.....	100
Granite	143	125	.....	.....	.....	.....	.....	268
TOTALS	25,206	33,142	4,171	258	176	146	20	63,119

SAWTIMBER CUT BY COUNTIES FISCAL YEAR 1951:

County	Ponderosa Pine M. ft.	Fir and Larch M. ft.	Spruce M. ft.	White Pine M. ft.	Lodgepole Pine M. ft.	Grand Fir M. ft.	Cedar M. ft.	Total M. ft.
Flathead	4,556	23,144	5,853	866	285	207	30	34,941
Sanders	16,877	10,631	75	.....	.....	.....	.....	27,583
Lincoln	5,089	9,873	866	45	990	.....	.....	16,863
Ravalli	1,495	492	116	.....	.....	.....	.....	2,103
Lake	1,777	1,891	63	.....	60	.....	.....	3,791
Mineral	3,342	646	.....	.....	.....	.....	.....	3,988
Missoula	5,372	9,572	.....	.....	.....	.....	.....	14,944
Lewis and Clark	784	143	.....	.....	.....	.....	.....	927
Powell	218	46	.....	.....	.....	.....	.....	264
Granite	.....	222	.....	.....	.....	.....	.....	222
Fergus	.....	180	.....	.....	.....	.....	.....	180
Big Horn	.....	50	.....	.....	.....	.....	.....	50
TOTALS	39,510	56,890	6,973	911	1,335	207	30	105,856

SAWTIMBER CUT BY COUNTIES FISCAL YEAR 1952:

County	Ponderosa Pine M. ft.	Fir and Larch M. ft.	Spruce M. ft.	White Pine M. ft.	Lodgepole Pine M. ft.	Grand Fir M. ft.	Cedar M. ft.	Total M. ft.
Flathead	3,868	16,741	4,962	359	123	170	1	26,224
Sanders	9,506	4,721	.....	46	.....	2	.....	14,275
Lincoln	5,265	8,589	608	28	280	19	.....	14,789
Ravalli	954	652	.....	.....	.....	.....	.....	1,606
Lake	881	1,558	147	82	97	9	29	2,803
Mineral	9,542	3,586	487	19	.....	.....	5	13,639
Missoula	2,152	5,990	11	.....	.....	.....	.....	8,153
Lewis and Clark	461	52	.....	.....	.....	.....	.....	513
Powell	3,543	4,160	145	.....	.....	.....	.....	7,848
Granite	66	67	.....	.....	.....	.....	.....	133
Fergus	263	9	.....	.....	.....	.....	.....	272
Carter	32	.....	.....	.....	.....	.....	.....	32
TOTALS	36,533	46,125	6,360	534	500	200	35	90,287

SAWTIMBER CUT BY COUNTIES FISCAL YEAR 1953:

County	Ponderosa Pine M. ft.	Fir and Larch M. ft.	Spruce M. ft.	White Pine M. ft.	Lodgepole Pine M. ft.	Grand Fir M. ft.	Cedar M. ft.	Birch M. ft.	Total M. ft.
Flathead	89	18,395	10,700	2,107	308	1,203	86	5	32,893
Sanders	7,361	3,106	8	-----	66	-----	-----	-----	10,541
Lincoln	2,411	3,993	128	22	150	149	9	-----	6,862
Ravalli	39	103	-----	-----	-----	-----	-----	-----	142
Lake	61	1,320	396	-----	7	-----	-----	-----	1,784
Mineral	14,231	3,935	61	10	-----	1	7	-----	18,245
Missoula	1,305	6,575	61	-----	-----	-----	-----	-----	7,941
Lewis and Clark	1,206	164	-----	-----	-----	-----	-----	-----	1,370
Powell	1,247	5,931	307	-----	-----	-----	-----	-----	7,485
Fergus	344	11	-----	-----	-----	-----	-----	-----	355
TOTALS	28,294	43,533	11,661	2,139	531	1,353	102	5	87,618

SLASH DISPOSAL

Funds collected for the piling and burning of brush and forest debris created during logging on private lands are designated as "Slash Disposal Funds." Funds collected for the same purpose, but under contract of sale of State timber, are described as "Brush Disposal Funds." These designations are used for accounting purposes so that the identity of funds may be kept separate.

The law governing the above named funds is called the Slash Disposal Measure and provides that for each one thousand feet of log scale cut, or the equivalent thereof, the expenditure of 75 cents is charged the private land owner, or operator, for the State's participation in disposing of the hazards created by the logging operator.

The purpose of this law and enforcement thereof is to reduce fire hazards created during logging operations. All cut-over areas are examined to determine the most practical and economic method of disposing of the slash fire hazard in order to provide reasonable protection against destruction by fire of the thrifty young growing forests reserved after logging. These trees form the basis for a future forest crop. The methods employed to perform this work are: (1) piling and burning, (2) fire line construction, (3) road construction, (4) selective burning, and (5) lopping, which is the removing of limbs from the tops of trees so they come in contact with the ground. Of the above, piling and burning is the method used most frequently.

The slash law further provides that the land-owner, or operator, may dispose of the slash created or he may elect to contract the job with the Office of the State Forester. However, in any event, the disposal must be completed within eighteen months after cutting.

The prevailing wage, at this writing, is hardly sufficient to perform a thorough job by the State in the disposing of the slash hazards. This is particularly true in ponderosa pine sites where the fire hazard is somewhat higher than other areas. A recommendation to alleviate this condition was presented to the Board of Land Commissioners on August 17, 1953 by the State Forester, and approval was given by this body to require the purchaser of State timber to pay \$1.50 for each unit of thousand board feet log scale cut. These funds are sufficient to reduce the hazards created during operations.

Within the past few years machine piling of forest debris has been used and in many cases has been found to be preferable to manual labor. The cost is less, the material is safer for burning, and there is the additional advantage of exposing the mineral soil for natural regeneration. Due caution must be exercised in the use of mechanized equipment on cut-over lands as these machines are destructive to advanced forest growth.

The following recommendations are submitted for study and investigation:

1. Hand piling and burning should be continued on roadside clean-up along traveled roads and other places of heavy concentration of slash where machinery would be inadvisable.
1. Fire line construction as a substitute for slash disposal where the hazards are not of a serious character.
3. Road construction and road improvements should go forward to facilitate accessibility for fire fighting equipment.
4. Clean-up road right-of-way clearings prior to construction, thus reducing fire hazards during road construction.
5. The possibility of requiring small private operators on State lands cutting less than one hundred thousand board feet log scale, to dispose of the brush in a manner satisfactory to the State Forester should be given careful consideration.

COLLECTIONS AND DISBURSALS OF FUNDS FOR THE DISPOSAL
OF BRUSH ON STATE TIMBER SALE AREAS

Fiscal Year	Balance Forward	Receipts	Total Available	Expenditures	Balance Forward
1947	\$ 58,210.89	\$ 54,812.11	\$ 113,023.00	\$ 47,719.74	\$ 65,303.26
1948	65,303.26	68,162.93	133,466.19	78,409.37	55,056.82
1949	55,056.82	59,893.02	114,949.84	84,470.60	30,616.42
1950	30,616.42	60,619.14	91,235.56	65,366.98	25,868.58
1951	25,868.58	108,682.04	134,550.62	84,516.22	50,034.40
1952	50,034.40	102,048.38	152,082.78	83,862.47	68,220.31
1953	68,220.31	99,170.36	167,390.67	86,288.79	81,101.88

COLLECTIONS AND DISBURSALS OF FUNDS FOR THE DISPOSAL
OF SLASH ON PRIVATE LANDS

Fiscal Year	Balance Forward	Receipts	Total Available	Expenditures	Balance Forward
1947	\$ 66,719.78	\$ 48,157.34	\$ 114,877.12	\$ 48,511.03	\$ 66,366.09
1948	66,366.09	64,008.05	130,374.14	62,818.52	67,555.62
1949	67,555.62	44,168.25	111,723.87	80,353.24	31,370.63
1950	31,370.63	85,471.45	116,842.08	78,960.89	37,881.19
1951	37,881.19	103,831.49	141,712.68	76,169.42	65,543.26
1952	65,543.26	110,727.58	176,270.84	80,924.13	95,346.71
1953	95,346.71	134,930.53	230,277.24	106,168.66	124,108.58

SLASH DISPOSAL TABLE
SHOWING AREA AND VOLUME IN BOARD FEET LOG SCALE CUT

Fiscal Years 1949 - 1953

	MISSOULA DISTRICT		KALISPELL DISTRICT		TOTAL BOTH DISTRICTS	
	Acres	Volume M. Bd. Ft. centage	Acres	Volume M. Bd. Ft. centage	Acres	Volume M. Bd. Ft. centage
Slash Taken						
Care of by						
Private Operator	27,250	265,223	44	40,963	215,436	37
Slash Taken					68,213	480,659
Care of by						39
State Crew	35,710	285,783	56	69,117	104,827	61
	<u>62,960</u>	<u>551,006</u>	<u>100</u>	<u>110,080</u>	<u>173,040</u>	<u>1,033,910</u>
TOTAL						100

SUMMARY

Total Timber Cut During a Five-Year Period	1,033,910,000	B. F. log scale
Total Acres Cut-over During Same Period	173,040	acres
Slash Taken Care of by Private Operators	480,659	B. F., or 39%
Slash Taken Care of by State Crews	553,251	B. F., or 61%

FIRE PROTECTION

The privately organized forest fire protection agencies have maintained a consistent progressive record in pre-suppression and suppression activities. The period of time which this report covers is also one in which activity in the forests was greater than at any previous time; hence the record established by these agencies is all the more outstanding. Favorable weather conditions did its part in reducing the fire hazards; however the year 1953 was an exception to this condition. Strong winds and low precipitation brought about extremely hazardous conditions and fires started quickly and easily. The thorough attention of these agencies in the use of its suppression crews enabled them to hold fires on State and private lands to a burn of 796 acres.

Sawmill and logging activities increase fire hazards in proportion to their activities. Negligence of the small sawmill operator in this respect resulted in the Montana State Board of Forestry, acting upon the powers vested in it by the Legislature, to make and enforce rules and regulations to correct this problem. The Office of the State Forester has additional employees whose major duties are to inspect sawmills, woods operations, slash disposals, etc., to insure adherence to these safety regulations.

There are approximately six million acres of State and private forest lands under organized protection in Montana, of which about 475 thousand acres are in State ownership.

The acreage protected by each agency is in the following table:

ACREAGE OF STATE AND PRIVATELY OWNED FOREST LANDS IN ORGANIZED FIRE PROTECTION DISTRICTS

Agency	Acreage
Northern Montana Fire Protection Assn.....	1,068,207
Blackfoot Fire Protection Assn.....	1,015,134
State of Montana.....	185,000
Federal Agencies	3,443,516
Other	288,143
TOTAL	6,000,000

The total cost of protecting these lands is now approximately \$284,000. Federal funds allotted Montana through the Clarke McNary Act share in this cost to the extent of approximately \$68,000, or about 24 percent of the total cost.

FORESTERS COOPERATIVE WORK FUNDS

All moneys received from public and private agencies and individuals co-operating with the State Forester or State Board of Forestry are deposited to the credit of this special fund in compliance with Section 81-1410, R. C. M., 1947 (1830-10 L. 1925) and are used for purposes set forth in Section 28-123 R. C. M. 1947 (Sec. 23, Ch. 128, L. 1939).

There is presented below a breakdown of the allotments received by the State of Montana. Moneys are received from the following sources: Clarke-McNary funds, Public Domain Funds, and from the Fish and Wildlife Department. For accounting purposes these allotments are placed in one account and expended under one accounting identification.

ALLOTMENTS

Fiscal Year	Clarke-McNary	Public Domain	Fish & Wildlife
1947	\$ 75,912.00	\$ 2,594.07	\$ 75.00
1948	96,640.00	7,782.19	75.00
1949	82,393.00	5,018.79	75.00
1950	76,625.00	5,018.79	75.00
1951	76,625.00	5,018.79	75.00
1952	71,496.00	5,974.75	75.00
1953	67,318.00	6,144.90	75.00

The following table combines the above funds and indicates receipts and expenditures:

Fiscal Year	Balance Forward	Receipts	Total Available	Expenditures	Balance Forward
1947	\$ 15,456.58	\$ 86,395.20	\$ 101,851.78	\$ 84,082.93	\$ 17,768.85
1948	17,768.85	78,349.13	96,117.98	89,060.45	7,057.53
1949	7,057.53	106,578.96	113,636.49	105,269.48	8,367.01
1950	8,367.01	90,894.80	99,261.81	84,709.14	14,552.67
1951	14,552.67	83,109.26	97,661.93	81,595.10	16,066.83
1952	16,066.83	84,686.16	100,752.99	84,655.72	16,097.27
1953	16,097.27	74,246.25	90,343.52	79,566.10	10,777.42

FIRE PROTECTION ASSESSMENTS

Fiscal Year	Balance Forward	Receipts	Total Available	Expenditures	Balance Forward
1947	\$ 22,941.39	\$ 21,933.34	\$ 44,874.73	\$ 22,944.77	\$ 21,929.96
1948	21,929.96	25,876.36	47,806.32	21,686.05	26,120.27
1949	26,120.27	26,093.98	52,214.25	27,608.13	24,606.12
1950	24,606.12	30,565.43	55,171.55	24,765.37	30,406.18
1951	30,406.18	31,012.39	61,418.57	30,048.50	31,370.07
1952	31,370.07	38,366.95	69,737.02	31,276.58	38,460.44
1953	38,460.44	37,607.95	76,068.39	36,748.96	39,319.43

Fire protection assessments are entered on the real and personal tax notices against owners of forest lands for fire protection. These assessments are entered on the tax rolls of the ten western counties. The following is an explanation of how funds are collected and expended: Taxes are collected twice each year—in the fall (October and November) and in the spring (April and May). This comprises a fiscal year (from July 1 to June 30). The total assessments collected during a fiscal year are allocated in November of the calendar year following the collections. This is according to the several written agreements by and between the Montana State Board of Forestry and the several organized fire protection agencies that protect the land in question. This set-up results in the fact the Forestry Board is one year in arrears in compensating the several contracting agencies for services rendered in protecting the forest lands involved.

RADIO COMMUNICATION

In 1953 the Montana State Forest Department decided to install 2-way radio for the activities in the Kalispell District. This is in line with what industry and other conservation agencies have done and have found to be efficient and effective in handling fire protection, timber sales and other forest activities such as logging operations.

Eight mobile units have been installed in cars and trucks used in this area. There are also seven radiophone portable pack sets and two "handie-talkies." These mobile units and other sets are operated on Frequency 31.26 Mc.

It is planned to extend the system for more and better coverage of the area and at this time a repeater station is being installed about two and one-half miles northwest of Kalispell which will be the base station for handling reports from our lookouts, work crews and stations in the forests.

It is believed that even with this small outlay of radio equipment, the constant communication between key personnel on the fire line and at headquarters has been one of the main factors in keeping acreage loss to a minimum. The radio system in the Kalispell District requires expansion to meet all requirements. It has proved itself in the efficient functioning of the State's fire control organization, and additional equipment is needed to meet this problem in the most efficient up-to-date manner.

FOREST INSECTS AND PROTECTIVE MEASURES

Mountain Pine Beetle (*Dendroctonus Monticolae*)

In the fall of 1947 the U. S. Forest Service reported an outbreak of the mountain pine beetle in the lodgepole pine stand of the Thompson River area, Sanders County. The mountain pine beetle is an important enemy of western white pine, ponderosa pine and lodgepole pine. Outbreaks of this insect infestation develop rapidly in lodgepole pine and in a few short years will spread to other valuable pine, leaving stands of dead trees.

In 1948 the U. S. Bureau of Entomology and Plant Quarantine made an extensive survey and discovered the entire Thompson River drainage, comprising 355,940 acres, was threatened by this epidemic. Much of this area was covered with highly economically important ponderosa pine. This area included the upper three-fourths of the Thompson River, the McGregor and Thompson Lake area, Pleasant Valley Creek drainage, Dahl Lake and the Little Bitterrott Lake area.

The land ownership of these areas was divided as follows: 54.5 percent by the federal government, national forests and public domain; 23.4 percent by Anaconda Copper Mining Co.; 15.8 percent by the Northern Pacific Railway Company; and 6.3 percent by the State of Montana.

These agencies recognized the need for immediate control action, and agreed to share their proportionate cost for the work involved. Inasmuch as the State of Montana had no funds set aside for this emergency measure, the remaining agencies assumed this obligation until the Legislature convened to appropriate a deficiency amount to reimburse them for the funds expended.

Control action was taken in 1949 with good results. Close supervision of these areas is maintained to detect outbreaks of infestations and when discovered, the agencies concerned pay their proportionate share of the work performed. The method explained above regarding the State's share is carried on in the same manner, as no over-all appropriation has been secured that will enable the State to pay its proportionate share without receiving a deficiency appropriation.

Spruce Bark Beetle (*Dendroctonus Engelmanni*)

Within the past five years vast acreages of spruce have been attacked by the spruce bark beetle. Entomologists claim that these attacks will continue until the mature and over-mature timber is removed from the infested areas. It is further claimed that the attack of this insect on the thrifty young trees does no appreciable damage as the tree is resilient enough to overcome the infestation. The State has been, and is in the process of, logging off the infested spruce trees. As a matter of record, all agencies are concentrating their efforts to remove from these areas the infected trees and those subject to attack. It is the concensus that logging is the only economic, feasible control; however, this has had an adverse affect on the stumpage price of other species, notably fir and larch. The stumpage price on spruce has remained constant, but the demand for the other species, due to more spruce on the market, has fallen to a considerable degree.

Spruce Budworm (*Choristoneura fumiferana*)

During the past twenty years the spruce budworm infestation has been increasing gradually and the infestation was more or less ignored until the Bureau of Entomology and Plant Quarantine made a field examination of the areas in 1952. This revealed that some 110,000 acres of Douglas fir trees were badly infected. At the rate the infestation had taken hold, it would mean the infestation would spread to an additional 70,000 acres in about one year. These facts and figures brought unanimous agreement among all parties concerned to exercise control measures. It was decided that airplane spraying was the most satisfactory method to control this epidemic.

As soon as weather conditions were favorable in 1953, 117,145 acres were treated. Out of this acreage the State owned 1,852 acres. Funds had been appropriated by the 33rd Legislative Session for the State's share in this program. The concensus was that good progress had been made in the eradication of the insects.

There is listed below a table of the amount of moneys expended on insect infestation by the State of Montana. The amounts appropriated in fiscal years 1951 and 1953 were deficiency appropriations for which work had been accomplished.

Fiscal Year	Authority	Amount	Where Used
1951	House Bill 455	\$ 7,535.50	Thompson River Bark Beetle infestation
1953	House Bill 366	2,389.87	Same as above
1954	House Bill 370	2,952.00*	Helena area—spruce budworm and Thompson River Bark Beetle infestation.

*Balance at February 1, 1954—\$ 539.34

An attempt was made at the 33rd Legislative Session to secure a sum of money for control measures of insect infestations. This request was eliminated from the bill. However, the Act which was passed and became a law provides "whenever the State Forester determines there exists an infestation of forest

insect pests of forest tree diseases . . . he shall, with the written approval of the State Board of Forestry, declare the existence of a zone of infestation, and shall declare and fix the boundaries . . .” The law also gives the State Forester the . . . “power to go upon the land within said zone of infestation and cause the forest insect pest infestation . . . to be suppressed, eradicated and destroyed in the manner approved by the State Board of Forestry . . .” The law further gives the State Forester authority to enter into cooperative agreements with federal, public or private agencies in this matter.

CHRISTMAS TREES

Providing sufficient Christmas trees for distribution both here and in other states has definitely assumed the proportions of “big business” during the past few years. During the calendar year 1953 over three million trees were shipped to nearly all points in the United States. The young Douglas fir tree has become very popular due to the fact that the climatic conditions in Montana afford slow growth, which produces a closer spacing of branches giving dense foliage and the beauty of a symmetrical appearance.

This annual harvest could be increased many times without any disturbance to watersheds or the future supply of timber as the Douglas fir is a prolific reproducer and the many small trees removed are actually beneficial for additional growing space of the remaining trees. At least one-half million acres of forest land in western Montana are by location and productivity well suited to growing Christmas trees.

In 1947 and 1948 there was discovered a defoliation and discoloration of Montana Christmas trees. This situation was due in a large degree to two factors; one, climatic and the other, biological. Inasmuch as this blight was not easily recognized prior to cutting, the result was that many trees were purchased that soon turned color or shed their needles. A fungus disease was mainly responsible for this “blighted” foliage condition. Several insects which are capable of causing similar damage were noted to be present also. The weather played an important part in the development of the disease. A moist growing season is very conducive to the spread of the fungus, and the 1947 spring was unusually wet. Weather conditions immediately before and after cutting have an important bearing on the behavior of blighted trees. As the disease is associated with certain weather conditions it therefore may not be a perennial worry.

It behooves the industry to develop understanding of the blight and the means of identifying it, and to learn just how much blight can be tolerated in order that the reputation of the Montana Douglas firs will not suffer in the Nation’s market.

In addition to decorating a high proportion of American homes, Montana Christmas trees furnish a substantial and important income to the State. The trees bring more than a million dollars into Montana annually and provide an additional income for some workers during the slack season when they otherwise would not be employed in forest protection and other outdoor occupations.

The State of Montana, realizing the potentialities of this industry, during fiscal year 1953 leased portions of State-owned land in the Kalispell District to a small number of individuals for the purpose of Christmas tree culture. These lands are to be used for that particular purpose. However the State has the option to cancel the lease agreement whenever it feels this work is not being carried on to further the Christmas tree program. All trees removed from these special areas will be paid for at a stumpage rate which will be determined by the State at the prevailing rate at the time of removal.

HISTORY OF THE LAWS CONCERNING THE EXCHANGE OF STATE-OWNED LANDS WITHIN GLACIER NATIONAL PARK FOR FEDERALLY OWNED LANDS

At the time Glacier National Park was created (May 11, 1910) through an Act of the U. S. Congress, the State of Montana actually owned in Glacier Park approximately 10,000 acres of valuable commercial forest land. Montana was one of the western states which received a land grant from the federal government. This grant became effective immediately after the territory of Montana was admitted into the Union as a state in 1889.

The Enabling Act, approved February 22, 1889, accepting Montana as a state, likewise defined in very specific terms the federal owned lands which the State would receive in the form of a grant. This was briefly as follows: approximately four and one-half million acres were allocated to the common schools. This area was comprised of Sections 16 and 36 in every township in the State with exceptions as follows: land classified as mineral lands were exempt from the grant, but the State was authorized to select other lands in lieu thereof. This policy also applied to homesteaders when using a squatter's right on unsurveyed lands. All sections 16 and 36, however, within federal reservations were exempt from any claim by the State, and no indemnity selections could be made due to such losses. Any Federal Reservations created after the State had received title brought about no change in the land status.

In addition to the four and one-half million acres of land granted to the common schools, a grant of 668,080 acres was given for the operation and maintenance of the State's higher educational institutions. A part of this grant was also allocated for the construction and maintenance of the capitol buildings at the State Capital.

The Congressional Act which authorized this grant permitted the State to select this acreage from any portion of the unappropriated lands on the public domain. The selections would only apply to those portions of public domain which were surveyed and approved by the U. S. Surveyor General.

The 10,000 acres of the State-owned lands in Glacier National Park, acquired by the United States Government through an exchange of lands with the State in 1953 are located within a valuable commercial forest area comprising about 100,000 acres. This area is between the North Fork of the Flathead River (west boundary of the Park) and extends to the base of the mountains on the east. This area has a far greater value for forestry purposes than for recreation alone. No improvements have been established in this area as only a very few visitors exhibit any interest in it.

The portion of the area in which the State-owned lands were located was surveyed by the U. S. General Land Office and approved by the U. S. Surveyor General in 1893 (an unusually early date considering inaccessibility of the area at that time).

The State automatically received title for Sections 16 and 36 and proceeded to select lands under the second grant. These lands were then filed with the U. S. Land Office, which action was an application for patent. The State therefore had a legal claim for the 10,000 acres in question and received title for them in 1893. This was seventeen years prior to the creation of Glacier National Park.

Among the earlier national forests created in Montana was the Lewis and Clark Forest Reserve (changed to National Forest in 1906). This area was created through proclamation by President Cleveland in 1896. The land was later subdivided and a part of it became the former Blackfeet National Forest; and on May 11, 1910, Glacier National Park was created.

This creation was accomplished through an Act of Congress, and a part of the Blackfeet National Forest is now Glacier National Park.

There is no record to indicate that the State received any credit for the unsurveyed sections 16 and 36 within Glacier National Park. On the other hand the State did receive credit for all unsurveyed sections 16 and 36 at the time that the National Forests were created. Two blocks of land were received amounting to about 120,000 acres. At the time Glacier National Park was created there were approximately 35,000 acres within these unsurveyed sections 16 and 36 for which there is no record to indicate the State received credit.

In 1925 the State Legislature passed a law stating "that all lands at present owned by the State of Montana and all that may be hereafter acquired by the State through escheat, exchange, purchase, grant or devise, which are of timber or for watershed protection, are hereby classified and designated 'State forests' and reserved for forest production and watershed protection."

In 1925 a forest survey and cruise of State-owned timber in Glacier National Park was completed. It was not until 1932 that the National Park Service requested an appraisal of the property. An appraisal was promptly prepared by the Office of State Forester in cooperation with the State Board of Land Commissioners. The appraisal at that time for the land and timber amounted to \$178,000. At this time the economy of the country was at a low ebb, hence the low valuation. A report covering the appraisal accompanied by a letter of transmittal was forwarded the Superintendent of Glacier National Park. There was also a verbal agreement that no State timber would be sold or land use permits issued for State-owned lands in the Park.

The National Park Service exhibited no interest during the years from 1932 to 1948 regarding a settlement for the acquisition of these lands.

In 1948 the economic conditions in the United States had reached a higher level which affected the appraised valuation placed on this land and timber in the 30's.

The State's timber lands in the Park were a part of the federal grant given in the form of an endowment to the State institutions; hence it was this department's duty to make every effort to secure the maximum value for this property.

Accordingly, the State Board of Land Commissioners approved the sale of a 640-acre tract of State timber in the Park near Nyack. This timber was advertised for sale, but no bids were received for its purchase.

This action by the State no doubt influenced the officials of Glacier National Park to enter into negotiations with the State Board of Land Commissioners for the acquisition of this property.

In 1948, Public Law 446, was passed on March 16, which provided that any lands, interests in lands, buildings, or other property owned by the State within Glacier National Park may be conveyed to the United States at an appraised value without competition.

In 1949 the Legislature amended the law passed in 1925 to provide "that any lands, interests in lands, buildings, or other property, owned by the State of Montana within the boundaries of Glacier National Park may be conveyed to the United States at an appraised value without competition, in accordance with the consent of the United States as expressed in Public Law 446, approved March 16, 1948; and, provided, further, that such appraised value shall be determined by the State Forester and be subject to the approval or

In accordance with the above State and federal laws, in 1950 the section of land known as the Nyack Unit was sold to the National Park Service for the lump sum of \$36,531.60. This price was determined at a meeting on July 19, 1950 of the Board of Land Commissioners where the National Park Service was represented by Everett Emmert, and James W. Girard, a member of the firm of Mason, Bruce and Girard, Consulting Foresters. The balance of the State land and timber in the Park was appraised at a compromise figure of \$520,560.

An agreement went into effect by and between the State Board of Land Commissioners and the National Park Service to establish a settlement on these lands on the basis of the agreed value, providing the State Legislature would appropriate one-half of the value to match the other half of the funds to be made available by the Government.

The Legislature, at its next session, failed to appropriate the necessary funds to carry out this agreement; hence, other methods were necessary to effect the transfer of these lands.

In accordance with Public Law 446, approved March 16, 1948, the State Legislature of Montana further amended its law to provide that such appraised value shall be determined by the State Forester "with the approval of the State Board of Land Commissioners subject to the final approval or disapproval of the Legislature of the State of Montana and provided further, that such lands, interests in lands, buildings, and other property, owned by the State of Montana, within the boundaries of Glacier National Park, may be exchanged for other lands of equal or greater value in accordance with the provisions of Section 81-304 of the Revised Codes of Montana, 1947, and any amendments thereto."

This paved the way for the exchange of these State lands for federally-owned lands and during the legislative session in 1953 the Act was enacted which approved the full market value as determined by the State Forester and approved by the State Board of Land Commissioners to certain State-owned lands located within the boundaries of Glacier National Park, authorizing and directing the exchange of said State land for federal lands of equal value. The following is the description of the land located within Glacier National Park which was exchanged for federal lands.

	Acres	Approximate Full Market Value
Township 34 North, Range 20 West		
Section 3	639.60 acres	\$ 64,334.64
Section 9	640	98,080.37
Section 21	560	123,139.00
Section 22	280	80,381.35
Section 28	398.06	18,984.60
Section 34	640	3,489.60

Township 34 North, Range 21 West		
Section 12	324.95 Acres	\$ 7,277.60
Township 34 North, Range 20 West		
Section 8	320 Acres	\$ 80,536.90
Section 17	160	47,660.35
Section 18	30.52	907.49
Section 20	38.14	2,260.70
Section 27	560	9,855.60
Township 34 North, Range 20 West		
Section 11	320 Acres	\$ 28,634.00
Section 13	320	14,479.00
Township 31 North, Range 17 West		
Section 36	278.28 Acres	\$ 30,257.90
Township 34 North, Range 20 West		
Section 16	640 Acres	\$104,264.03
Section 36	480	4,016.54
Township 35 North, Range 21 West		
Section 16	277.22 Acres	\$ 19,555.90
Section 36	640	17,343.25
Township 36 North, Range 21 West		
Section 16	640 Acres	\$ 14,333.00
Township 37 North, Range 22 West		
Section 36	91.48 Acres	\$ 22,123.84
Township 34 North, Range 20 West		
Section 25	320 Acres	\$ 4,917.39
Township 34 North, Range 21 West		
Section 1	610.24 Acres	\$ 10,230.85
Section 2	145.36	2,619.00
TOTAL APPROXIMATED MARKET VALUE.....		\$789,683.90

MONTANA STATE BOARD OF FORESTRY

The Montana State Board of Forestry was created by legislative act in 1939. The Board was created with the express purpose of promoting and facilitating cooperation between the State of Montana and all public and private agencies. Prior to this time, the large majority of owners of the privately owned forest lands in western Montana were not making their pro-rata contribution for fire protection. The result of this law gave the Montana State Board of Forestry the power to assess the individual owner on the tax rolls so that the private forest land-owner, as well as the State, is now contributing its share towards fire protection. The law of 1939 was further amended in 1941 and clarified the membership of the Board and also clearly defined its powers and duties.

The Montana State Board of Forestry, according to law, is required to convene once each year, or more if the chairman so elects to call a meeting. The following is a brief report year by year of the progress of this body:

1 9 4 7

Members	Organization Represented
Governor Sam C. Ford.....	Ex-officio Chairman
W. C. Lubrecht.....	Blackfoot Forest Protective Assn. and Northern Montana Forestry Assn.
T. C. Spaulding.....	Montana School of Forestry, Montana State University
D. P. Fabrick.....	State Water Conservation Board of Montana
P. D. Hanson.....	U. S. Forest Service, Region 1
George Neils.....	Montana Lumber Manufacturers' Assn.

Sylvan J. Pauly.....Montana Woolgrowers' Association
Ernest White.....Farm Woodland Owners
Rutledge Parker Secretary

Three meetings were held during 1947 with the following progress made.

The law regarding slash disposal was established at 25c per M for removing the hazards on private lands created by logging. The Board of Forestry went on record requesting this amount be increased to 75c per M. This bill was put in order to be presented at the next legislative session in 1949.

The Board proposed an amendment regarding the portion of the laws on cooperation with owners and lessees. This amendment authorized "the Montana State Board of Forestry to cooperate with owners or lessees of farm, range, forest, watershed or other uncultivated lands in private and public ownership for the protection from fire of the cultivated agricultural crops or natural resources existing or growing thereon; and also in the conservation and perpetuation of such lands and resources, including the prevention of soil erosion and the regulation of stream flow." This amendment became a law in the 1947 legislative session (identified as 81-1409, Ch. 14, R. C. M. 1947).

The Interagency Committee, appointed during the General Fire Protection meeting held on April 18, 1947, had the job of revising the Rules and Regulations of the Board of Forestry applicable to all camping or other operations on forested land within the State. This work was accomplished and presented to the full body of the Forestry Board at its annual meeting on August 30, 1947, where the rules were unanimously approved. The following are the revised rules and regulations:

State of Montana
MONTANA STATE BOARD OF FORESTRY

Violation of any of Montana's forestry laws or of any regulations promulgated by the Montana State Board of Forestry under authority of Chapter 128, Laws of 1939, as amended by Chapter 141, Laws of 1941, is a criminal offense punishable by fine or imprisonment, or both.

APPLICABLE TO ALL CAMPING OR OTHER OPERATIONS ON
FORESTED LANDS WITHIN THE STATE

R E G U L A T I O N S

NO. 3

During periods of dangerous fire weather, no person shall enter or be upon those forested lands designated by public proclamation of the State Forester, under the authority of the State Board of Forestry, as areas of extreme forest fire hazard except under a written permit, issued by the State Fire Warden. Permits to enter or be upon such areas during critical periods will not be issued by the State Fire Warden except upon showing of real need on the part of the applicant.

Provided, however, this requirement shall not apply to those persons having actual residence, property ownership, or employment on an area of extreme hazard, or while going to or from such residence, property or employment.

NO. 4

During the forest fire season, May 1 to September 30 or any legal extension thereof, all persons, firms, or corporations engaged in cutting, logging, milling, clearing, or other construction or forest utilization operations on forested lands shall have available for firefighting purposes adequate caches of firefighting tools and equipment in good condition and located at points where immediately available in case of need for firefighting purposes. The State Forester, or State Fire Warden acting under his authority, and in cooperation with the operator will, for each operation, determine the character and quantity of fire tools and equipment to be made available and their location on the operation. Proper notice and publicity will be given by the State Forester for the benefit of all operators.

NO. 5

During the forest fire season each operator on forested land employing 20 men or more shall designate and furnish, and be responsible for a fire patrolman, equipped for extinguishing small fires, during hours and periods as required by the State Fire Warden. His duties shall be to patrol the operation; enforce fire laws and rules; extinguish small fires and immediately report all fires beyond his control. When requested by the State Fire Warden, sawmill operators will provide a watchman for those hours of the day or night when the crew is not on the job.

NO. 6

On all crew operations on forested lands each operator shall designate a fire crew and a fire foreman with power to act on their own initiative and to take immediate action to suppress any fire starting on the operating area.

NO. 7

During the forest fire season smoking is prohibited on all operations on forested lands except at safe places designated and properly posted by each operator. Lunch fires shall be restricted to safe and especially prepared places.

NO. 8

Prior to the forest fire season, and as directed by the State Fire Warden, the operator of any camp on forested lands shall dispose of all accumulations of slash, grass or other inflammable material surrounding all buildings, dwellings, tents, or other structures. Inflammable material surrounding camps erected during the fire season shall be disposed of in accordance with the State Fire Warden's directions.

NO. 9

Prior to the forest fire season, every operator of a sawmill or other woodworking plant located upon or immediately adjacent to forested lands shall dispose of all slash, brush, snags and other natural debris within such distance from such sawmill settings, camps and other dwellings, as may be designated by the State Fire Warden.

Operators of sawmills or other woodworking plants erected during the fire season on or immediately adjacent to forested lands will not begin sawing or other wood utilization operations until the State Fire Warden is satisfied that conditions surrounding the mill or plant are such, or have been made such, that sparks from waste and debris burning, etc., will not set fire in the adjacent forest.

NO. 10

During the forest fire season each unit of mobile or stationary power equipment, including trucks, operated on forested lands, shall be equipped with at least one chemical fire extinguisher of not less than one quart capacity, at least one shovel and enough other firefighting tools to equip, for firefighting purposes, the number of men that ordinarily work with such equipment.

In addition to hand tools, each steam-powered logging locomotive shall, during the forest fire season, be equipped with a water tank, having a capacity of not less than 2,000 gallons, and in addition a force pump, if the engine pump and engine tank are not adequate for firefighting purposes. At least 100 feet of one-inch hose or larger will be provided for each unit.

NO. 11

During the forest fire season all internal combustion and steam-powered equipment, including all automotive equipment, operated on forested lands, shall be equipped with adequate and efficient spark arresters or mufflers. Trucks on which it is impractical to maintain a muffler shall have the exhaust extended upward above the cab.

NO. 12

Should any operator believe that, in his case, any requirement of the State Fire Warden is excessive, the operator may request the State Forester, acting for and in behalf of the State Board of Forestry, to review said requirement; and if in the opinion of the State Forester any or all are not necessary in the interest of public safety, he may make such changes as he deems advisable.

**PERSONS DESIGNATED AS STATE FIRE WARDENS
UNDER THE LAWS OF MONTANA**

Ex-officio Fire Wardens, serving for purpose of enforcing penal provisions of forestry laws and rules: Members of State Board of Forestry; State Forester and all regular employees of his office; officers of organized forest protection districts; members of the Montana Highway Patrol; all field officers, in the U. S. Forest Service; game and deputy game wardens; officers of National Park Service and Indian Service in Montana.

Also the State Forester may appoint public-spirited citizens to act as volunteer fire wardens with same powers as ex-officio fire wardens designated above.

REFERENCE: Chapter 128, Laws of 1939, and Section 28-125, Revised Codes of Montana 1947.

Revised Regulations June 4, 1947

The protection acreage rates on the period ending June 30, 1946 were also approved for the period ending June 30, 1947, and are as follows:

Associations	\$.03½
Cabinet and Kootenai Forests.....	.02½
Flathead Forest	.03
State of Montana.....	.03
Indian Agency	.02
Lolo Forest	.0291
Helena Forest, Avon District.....	.013

These fire protection districts comprise the following counties in western Montana:

Lincoln
Granite
Missoula
Ravalli
Mineral

Flathead
Sanders
Powell
Lake
Lewis & Clark

The Interagency Committee in meeting as a group on April 18, 1947, proved its effectiveness as a committee to further organize and understand the duties of each public and private association dealing with fire protection in the State of Montana. It developed that this resulted in closer agency cooperation in complying with and understanding the rules and regulations set down by the Montana State Board of Forestry. This Committee, in its report to the Board of Forestry exhibited the close coordination from one agency to another in enforcing the State Fire Laws and Regulations..

1 9 4 8

Members

Organization Represented

Governor Sam C. Ford.....	Ex-officio Chairman
W. C. Lubrecht.....	Blackfoot Forest Protective Assn and Northern Montana Forestry Assn..
T. C. Spaulding.....	Montana School of Forestry, Montana State University
D. P. Fabrick.....	State Water Conservation Board of Montana
P. D. Hanson.....	U. S. Forest Service, Region 1
George Neils.....	Montana Lumber Manufacturers' Assn.
Sylvan J. Pauly.....	Montana Woolgrowers' Association
Ernest White.....	Farm Woodland Owners
Rutledge Parker	Secretary

There was one meeting held during this year. The Board approved the upward changes in the rates for fire protection for the following associations:

	From	To
State of Montana.....	\$.03	\$.04
Indian Service	.02	.03
Blackfoot Fire Protection Assn.....	.035	.04
Northern Montana Forestry Assn.....	.035	.04

A report was made on the law and regulations of the Montana State Board of Forestry applicable to all camping or other operations on forested lands within the State. These laws have been in operation for one year and the general concensus is that they are satisfactory in every way and cover the phases of operation in a fair and just manner.

The Board unanimously approved the following county lists of forest land owners who had not paid their fire protection charges for the fiscal year ending June, 1948:

Flathead
Granite
Lake
Lincoln
Lewis & Clark

Mineral
Missoula
Powell
Ravalli
Sanders

Members	Organization Represented
Governor John W. Bonner.....	Ex-officio Chairman
John B. David.....	State Water Conservation Board of Montana
P. D. Hanson.....	U. S. Forest Service, Region 1
W. C. Lubrecht.....	Blackfoot Forest Protective Assn and Northern Montana Forestry Assn.
George Neils.....	Montana Lumber Manufacturers' Association
Sylvan J. Pauly.....	Montana Woolgrowers' Association
Ernest White.....	Farm Woodland Owners
C. W. Waters.....	Montana School of Forestry, Montana State University
Rutledge Parker	Secretary

A resolution was put in order publicly commending the Blackfoot Forest Protective Association and the Northern Montana Forestry Association for the excellent record attained during the critical fire season.

The fire protection rate in a portion of the drainage of the Big Blackfoot River and some area in the Little Blackfoot River has had a varied rate. The Board unanimously approved that this fire protection assessment be made uniform and the fire protection rate was established for this over-all area at \$.027.

The Board unanimously approved the following ten lists of forest land owners who had not paid their fire protection charges for the fiscal year ending

Flathead	Mineral
Granite	Missoula
Lake	Powell
Lewis & Clark	Ravalli
Lincoln	Sanders

The amendment to the slash law which the Board proposed to be presented at the 1949 session of the Legislature increasing the rate from 25c to 75c per M for removing the hazards created during logging operations on private lands passed and became a law in 1949.

Members	Organization Represented
Governor John W. Bonner.....	Ex-officio Chairman
P. D. Hanson.....	U. S. Forest Service, Region 1
W. C. Lubrecht.....	Blackfoot Forest Protective Assn. and Northern Montana Forestry Assn.
George Neils.....	Montana Lumber Manufacturers' Assn.
Sylvan J. Pauly.....	Montana Woolgrowers' Association
C. W. Waters.....	Montana School of Forestry, Montana State University
Ernest White.....	Farm Woodland Owners
Rutledge Parker	Secretary

Unanimous approval of the Board increased the rates of fire protection assessments to \$.04 in the following counties: Flathead, Lake, Lincoln, and Missoula. The upward rate was recommended because the private association rates bordering these areas had been increased to \$.04 and this move by the Board eliminated the controversies of the various owners whose rates were not similar. This increase will take place for fiscal year 1951 .Increased costs in fire protection necessitated this move also.

The increase to \$.027 for the area classified as forest lands within the Avon District in Powell County was also approved. This district is protected under an agreement with the Forestry Board and the U. S. Forest Service and will go into effect with the commencement of fiscal year 1951.

The fire protection assessment lists of the ten western counties (Flathead,

Granite, Lake, Lewis & Clark, Lincoln, Mineral, Missoula, Powell, Ravalli, and Sanders) were approved individually by the Board.

The presence of the pine bark beetle infestation in the Thompson River country (Sanders County) was noted in 1950. These lands are owned by federal, State and private interests, with the percentage estimated at: 54.5 percent by the U. S. Forest Service; 23.4 percent by the Anaconda Copper Mining Company; 15.8 percent by the Northern Pacific Railroad Co.; and 6.3 percent by the State of Montana. Inasmuch as control measures had to be instituted as soon as discovery was ascertained, an agreement was entered into with the federal and private interests to finance the State's share of the cost of protective measures. In the spring of 1949 the control measures taken amounted to \$107,000, with the work being done mostly on national forest land. Approximately an additional \$16,000 was further expended during the spring of 1950. The aforementioned agreement between the federal and private interests concerned the money necessary for the State to carry its proportionate share; and if the funds became available, the State would finance its pro-rata portion of the control measures taken.

The Board went on record as approving the amount of \$7,500 to cover its portion of the work and a recommendation to the Legislature to appropriate this deficiency amount to reimburse the agencies who advanced the funds.

The Board further went on to approve that recommendation be made to the Legislature that the Office of the State Forester have \$15,000 set aside during the 1952-53 biennium to be used in the event another such forest infestation arises.

The matter of youth education in the practices of conservation was discussed and the Board went on record as approving the following resolution to be forwarded the State Board of Education:

The State Board of Forestry at its regular annual meeting on August 16, presided on by Governor Bonner, opened for discussion the question of how to get better public recognition of good conservation principles in the management and protection of forest and range lands. This led to a lively and spirited discussion of better conservation principles as they apply to the entire field of land management and protection. It was generally agreed that consciousness of the need for better use of our forests, ranges, soils, minerals, water, wildlife, etc., can best be done through educational means, particularly with young people. The discussion pointed to the great need for better understanding of how our natural resources have affected our history and economy, and what we must do in better management and protection if this nation is to continue to enjoy the benefits of abundant natural resources.

The discussion was followed by the unanimous passage of a resolution to be presented by Governor Bonner, or the Superintendent of Public Instruction, at the September meeting of the State Board of Education. The resolution is to the effect that the Board of Education give serious consideration to including in the curriculum of all grade and high schools, Montana civics, including complete education as to the benefits of our natural resources and what an abundance of them means to our future; understanding of the broad principles which must be observed in better use and protection of our forests, soils, range lands, water, wildlife, scenery, minerals, etc.; and an appreciation of what civic responsibilities must be borne by each person to see that our natural resources are wisely used and managed. The resolution specifically recommends that a conservation edu-

cational and training program, adequate to accomplish the foregoing objectives, be adopted for the grade and high schools of Montana. Preparation of teachers is an important requirement. The lead taken by the Montana Educational Association in its Conservation Week (April 1950) issue of Montana Education is an excellent start.

It was the sense of the discussion that all citizens must be made to realize that our national welfare and strength will depend on how well we use and manage all our natural resources, and that, within its sphere, the State Board of Forestry will be pleased to take the lead in assisting the State Board of Education, its institutions (junior colleges, high schools, and the common schools) in their effort.

1951

Members	Organization Represented
Governor John W. Bonner.....	Ex-officio Chairman
P. D. Hanson.....	U. S. Forest Service, Region 1
W. C. Lubrecht.....	Blackfoot Forest Protective Assn. and Northern Montana Forestry Assn.
George Neils.....	Montana Lumber Manufacturers' Assn.
Sylvan J. Pauly.....	Montana Woolgrowers' Association
C. W. Waters.....	Montana School of Forestry, Montana State University
Ernest White.....	Farm Woodland Owners
John David.....	State Water Conservation Board of Montana
Rutledge Parker	Secretary

The fire protection lists of the ten western counties (Flathead, Granite, Lake, Lewis & Clark, Lincoln, Mineral, Missoula, Powell, Ravalli, and Sanders) were approved by the Board. It was noted that there was an increase in receipts from a total of \$29,000 to the overall total of \$35,000 for this fiscal year. This was due primarily to the increase in the acreage rate approved by the Board at its annual meeting in 1950, and also to additional lands which have been classified as forest lands.

It was explained to the Board that certain areas that are contiguous to the Kootenai, Helena and Deer Lodge National Forests are primarily ranch lands, so all fire protection collections are on a voluntary basis. Inasmuch as the national forest lands are protected by the U. S. Forest Service, and the contiguous areas also, the Service has discovered that the voluntary payments have not been sufficient to cover the protection costs. The Board approved that the protection boundaries be changed so not to include these ranch lands. The Montana Rural Fire Fighters Service will be notified of the change of boundaries so their service can go into effect.

The matter of 1,500 acres of privately owned scattered forest land in Sanders County which was being protected by the Blackfoot Forest Protection Association was discussed. Inasmuch as this area was more accessible to U. S. Forest Service for protection, it was approved by the Board to exclude this area from the Blackfoot Association and include it in the U. S. Forest Service protection boundaries.

With respect to the recommendation by the Board in 1950 to request the Legislature to appropriate funds for insect control, it was reported that the Appropriations Committee was not in sympathy with appropriating any emergency funds for this work; however, the Committee did state it would approve an appropriation to meet any obligations incurred by the State. The Office of the State Forester did receive a deficiency appropriation in the amount of \$7,535.50 to reimburse the federal and private interests for the State's share in the control measures taken on insect infestation in the Sanders County area.

Members

Organization Represented

Governor John W. Bonner.....	Ex-officio Chairman
John David.....	State Water Conservation Board of Montana
H. F. Root.....	Blackfoot Forest Protective Assn. and Northern Montana Forestry Assn.
George Neils.....	Montana Lumber Manufacturers' Assn.
Sylvan J. Pauly.....	Montana Woolgrowers' Association
C. W. Waters.....	Montana School of Forestry, Montana State University
Ernest White.....	Farm Woodland Owner
P. D. Hanson.....	U. S. Forest Service, Region I
Rutledge Parker	Secretary

The Chairman, in respect to the passing of Mr. W. C. Lubrecht, one of the members of the Board, requested the body to stand and observe a moment of silence. It was also requested that a resolution be sent to the members of Mr. Lubrecht's family on behalf of the Montana State Board of Forestry.

It was noted that the fire protection assessment lists were primarily the same as the previous year, with few changes in ownership. The Board unanimously approved the list of the ten western counties (Flathead, Granite, Lake, Lewis & Clark, Lincoln, Mineral, Missoula, Powell, Ravalli, and Sanders) for fire protection assessments.

Some time before the 1952 meeting of the Board, the Governor selected individuals to form a Work Committee of Governor's Insect Control. This body was also empowered with formulating bills to be presented at the next Legislative Session meeting in 1953.

An Act was proposed by this Committee "to provide for the protection and preservation of forest resources of the State of Montana from damage, injury or destruction by forest insect pests and tree diseases and to protect the forests and watersheds of Montana and enhance the production of forests and to promote the stability of the industry, to protect the recreational values of the forests and to independently and through cooperation with the federal government, the State government and private forest land owners to control, suppress and eradicate outbreaks of insect pests and tree diseases in the State of Montana."

This bill further incorporated that "whenever the State Forester determines that there exists an infestation of forest insect pests or forest tree diseases injurious to the timber of forest growth on forest lands within the State of Montana and that said infestation is of such a character as to be a menace to the timber or forest growth of this State, the State Forester shall, with the written approval of the State Board of Forestry, declare the existence of a zone of infestation, and shall declare and fix the boundaries so as to definitely describe and identify the said zone of infestation."

"Thereupon, the State Forester or his agent shall have the power to go upon the land within said zone of infestation and cause the forest insect pest infestation or forest tree disease to be suppressed, eradicated and destroyed in the manner approved by the State Board of Forestry and in order to accomplish the suppression, eradication and destruction of such infestation the State Forester may enter into cooperative agreement with the Federal Government and other public or private agencies and with forest land owners using such funds as have been or may hereafter be made available for such purposes."

This proposed Act went further to state, "For the purposes of this Act there is authorized to be appropriated not in excess of \$25,000 during any appropriation biennium; provided, however, that if and when appropriated, the same may be spent only in the control of said infestations on or threatening State-owned forest lands, during the biennium for which it was appropriated, and, provided further, that no part of said appropriation may be spent when no forest insect pest and disease outbreak zone of infestation is established as described in (Section 5) of this Act.

The bill further embodied that "Whenever the State Forester determines that forest insect or disease control work within the designated zone of infestation is no longer necessary or feasible, then the State Forester on advice and written consent of the State Board of Forestry, shall abolish the zone of infestation.

The Forestry Board approved this bill in its entirety and it was further moved that it be presented to the Legislature at its 1953 session.

This bill with one change passed the Legislature in 1953 and was signed by the Governor. The change was the appropriation of \$25,000 which was stricken from the bill; however, this bill did give the State Forester the power to determine and declare the zone of infestation with the approval of the State Board of Forestry.

The next bill presented at this meeting concerned the qualifications and salary of the State Forester. The following amendments were submitted to the

Board: (1) adjust salary of State Forester to \$7,200 per annum, (2) that the Governor give due consideration to the State Board of Forestry's recommendation in the appointment of a State Forester, and (3) that the State Forester need not be an elector of the State of Montana. It was suggested by Governor Bonner that inasmuch as all salaries are being raised to justify cost of living, and to stay in line with other departments, the figure should be \$7,500. Governor Bonner also requested that "due consideration" (in (2) above) be changed to read "that the Governor shall have the approval of the State Board of Forestry in the appointment of a State Forester."

The Board went on record approving these amendments with the suggestions of the Governor and also approved this bill being submitted to the forthcoming legislative session.

This bill was presented to the Legislature and the following amendments were incorporated in the law: (1) "and his salary shall not exceed Six Thousand Dollars (\$6,000.00) per annum, at the discretion of the State Land Board . . ." (2) This portion of the bill "that the Governor shall have the approval of the State Board of Forestry in the appointment of a State Forester" was stricken from the bill and remained as formerly written, to-wit: "The Governor, by and with the advice and consent of the Senate, shall appoint a State Forester . . ." The portion of the bill in which the State Forester need not be an elector of the State of Montana was favorably voted on by the Legislature and is now a part of the law.

Another bill was proposed which was entitled "An act to amend sections 28-103; 28-104; 28-109 and 28-129, Chapter 1, Title 28, Revised Codes of Montana, relating to the manner of classifying forest land for fire protection assessment purposes by eliminating the provision that the State Board of Forestry must classify land as forest land before it can be assessed for fire protection, and, in lieu thereof, defining the lands upon which fire protection assessments may be

made." This Act was approved by the Board; however, the Legislative Committee, meeting later on in the year, analyzed the bill further; and with the consent of the Forestry Board members elected not to present it to the Legislature at this particular time. It was felt that further study would be necessary before this bill could be presented for passage in the Legislature.

The Board, at its annual meeting, discussed generally the portion of the State Forester's law which deals with his giving "six lectures on practical forestry to the students attending the State University, the State Agricultural College, and the State Normal School, during each year." It was decided that this law should not be changed until this program could be carried on by some member on the staff at the University.

The amendment to the slash disposal law increasing the time limit for its removal from twelve months to 18 months was approved; and it was recommended this be presented to the Legislature for action in 1953 session.

This bill passed at the 1953 Legislature and the law has been amended to read "eighteen" instead of "twelve."

The resolution, which will be put in the form of a bill to be presented to the Legislature regarding the incorporation of the Keep Montana Green Committee and the Montana Rural Fire Fighters Service, was adopted by the Board. This bill requested funds be made available to maintain this program on a year-round basis, with the State appropriating one-half of the expenses, and the remaining portion being paid from Clarke-McNary funds.

This bill was defeated in the Legislature, so the incorporating of the two agencies did not come to pass.

The following rules for the care and use of power saws in the woods were approved by the State Board of Forestry:

1. Fill gas saw on an area of mineral soil only.
2. Use funnel to fill tank and avoid spilling of inflammable fuel.
3. Use proper oil and gas mixture to minimize carbonization.
4. Do not start power saw at place of filling.
5. Keep gas saw clean of sawdust and inflammable material.
6. Keep muffler on the power saw and in good condition.
7. Keep spark plugs and wire connections tight.
8. Keep a filled fire extinguisher and/or shovel with power saw at all times.
9. Clear inflammable material from point of saw cut.
10. Put out any fires started and report them to the foreman, together with causes.
11. All fires reported to the foreman to be filed as a record with the State protection agency.

The following are the salient points brought out in the talk by the Office of the State Forester regarding the State's forested areas, with justification remarks and recommendations concerning forest practices:

I.

Commercial Forest Lands:

Western Montana:

Saw Timber	200,000 acres
Young Growth	227,000 acres

Not restocking satisfactorily.....	19,000 acres	
		446,000 acres
Eastern Montana:		
Saw Timber	30,000 acres	
Young Growth	57,000 acres	
Not restocking satisfactorily.....	3,000 acres	
		90,000 acres
Non-Commercial Forest Lands:		
Western Montana.....	40,000 acres	40,000 acres
Eastern Montana	110,000 acres	110,000 acres
TOTAL FOREST LAND.....		686,000 acres

II.

Volume in Board Feet Log Scale of Saw Timber Stands On State Owned Lands as of July 1, 1952

Western Montana	1,000 million
Eastern Montana	100 million
TOTAL.....	1,100 million

Annual Drain From Cutting During the Pre-War, War and Post-War Periods, 1920 to 1952, a Total of 32 Years

Due to the urgent need for lumber during the war and post-war period for the Armed Forces, home and industrial uses, there has been an unprecedented demand for saw timber from State-owned and other forest lands in Montana during the past twelve years. This demand continues strong, with stumpage prices at the peak at the present time.

Twenty years previous to the last war, it was estimated that the State-owned lands which contained 2 billion 700 million feet, log scale, was a sufficient volume of commercial State-owned saw timber to permit the cutting of from 30 to 35 million board feet log scale annually over a 75 to 80-year period. At the end of this time, if such forest practices were followed which would utilize the mature and over-mature timber for commercial purposes and leave the marginal thrifty fast growing trees, it was expected that a second crop of timber could be harvested on State-owned forest lands at the end of the period indicated. This result would be contingent upon the State employing trained men to mark the timber for cutting, care in the logging of the area to safeguard advance growth, careful supervision in disposing of the slash hazards created during logging operations, and the continuation of the present program in the protection of the forest from fire. This practice was followed until the country entered the war in 1941.

From the beginning of the fiscal year 1941 and continuing through the fiscal year 1952, the picture changed very materially. Instead of cutting annually 30 to 35 million feet, the total cut for this 12-year period, was about 700 million feet log scale, or an average of 60 million feet or more per annum. As previously stated, this leaves a balance of 1 billion 100 million feet of saw timber remaining to date.

Competition has been keen for the purchase of State timber. Prices paid in some instances were ten to twenty percent higher than the State's appraised value.

JUSTIFICATION FOR THE INCREASED CUTTING OPERATIONS

It was essential to take into consideration the tremendous demand for lumber and other wood products for the Armed Forces and the building of homes and industrial uses at home and abroad. The demand, however, continues to be strong, which indicates the country as a whole is far short of reaching the desired goal.

INCREASED SALE OF STUMPAGE AND HIGH PRICES HAVE BEEN IMPORTANT FACTORS FOR INCREASING THE STATE ENDOWMENT INVESTMENT FUNDS

From 1905 to 1926 the total income from the State-owned forest lands was about one million dollars. From 1926 to June 30, 1952, the income has been \$5,956,331 from timber sales, and \$234,556 from land rentals, making a total of \$6,190,887; or a cumulative total of \$7,190,887.

As of August 1952, timber sale contracts now in effect amount to about \$1,400,000. At the end of the fiscal year 1955, if there is no radical change in our present economy, this total should be approximately \$10,000,000.

As custodians of a part of the federal land grant to the State, comprising an estimated 686,000 acres of forest lands allocated as an endowment to assist in supporting our common schools and other State institutions, it is incumbent upon us as a business proposition, to try and get the greatest possible income from the resources involved consistent with leaving the forest in a good degree of protection and natural reforestation. Therefore, during periods of emergency, such as during the past twelve years when the demand has been strong and the prices are from 500 to 700 percent above normal, it has been the opportune time to greatly increase the endowment investment over and above what it was at the end of 1939.

PRESENT STATE APPROPRIATIONS NOT ADEQUATE

It is true that appropriations for handling the present volume of timber sale business are not sufficient to employ enough experienced foresters to supervise timber marking and assist in closer supervision of logging operations. However, the disposal of this timber at the highest stumpage prices ever known is of paramount importance to our common school and other State institutions which are the beneficiaries of lands granted to the State. This financial advantage seems to outweigh many times the minor mistakes that may be made in marking timber to be cut and in logging practice.

Another very important reason for not curtailing the cut of State timber is that in all of these virgin timber stands a high percentage of it is mature, over-mature, and decadent. This is the class of timber that is sustaining a heavy annual loss through bark beetle attack. Entomologists have repeatedly advised all timber owners that this loss will be practically eliminated when the mature and over-mature and decadent trees are removed.

PONDEROSA PINE CUTTING PRACTICE

Our conception of the best forest practice in this timber type would be

first a salvage operation which would remove the mature, over-mature and decadent timber as soon as possible. This old timber would average from 20 to 25 percent of the merchantable timber volume. Millions of feet of Ponderosa pine timber in Western Montana are being lost annually through old age. Large private timber holding and operating companies whose lands are more or less consolidated have already started a salvage system removing windfall and the over-mature timber. Unfortunately, a salvage system of removing this class of timber from the State's scattered holdings would involve too high a road construction expense to make it financially worthwhile, either for the operator or for the State.

Loss from windfall and beetle attack seems to argue against this cutting system unless further research can show that the increase in growth of the timber reserved from cutting will more than offset the losses. Such a research must be on a sufficiently large scale to include various soil types, site classes, exposures, slopes and elevations on which this specie forms the predominating type.

The State's sale contracts call for a minimum of 18 inches diameter breast high, which is lowered or raised to fit the maturity of the trees. In average stands this system removes from 85 to 90 percent of the merchantable stand volume. Well crowned "bull" pine are invariably reserved from cutting regardless of size. The advantages of this system are higher stumpage rates of at least three to five dollars per thousand feet, log scale. Windfall of merchantable size trees is negligible. Trees left are not likely to be attacked by bark beetles for the next one hundred years.

The disadvantage of the system is largely public sentiment against the sudden change from mature forest to young forest growth. In checking back to timbered areas cutover nearly 60 years in the horse-logging period, and without any brush disposal, we find today some of our most promising young stands of timber.

It is our conviction that the selective system of cutting Ponderosa pine will seldom give the maximum production. There will always be too many areas of which the density of the young trees—(dog hair)—nullifies growth and other areas will be barren.

A program of tree planning will be necessary if we are ever to receive the maximum yield in this type of timber.

On some of the State Ponderosa pine stands in the Thompson River which were cutover during the past eight years, the State would have been far better off to have made a clean cut of all timber, and then followed with artificial reforestation. With a pulp mill advantageously located the residual stand of timber left after taking out the saw timber could have been disposed of at a price that would have paid the full cost of reforestation.

Within 75 or 100 years, all of our mature and virgin stands of timber available for cutting will have been harvested. By that time we should know what cutting practice system will yield the highest financial returns.

PERTINENT FACTS SUBMITTED TO THE MONTANA STATE BOARD OF FORESTRY FOR ITS INFORMATION 1947 - 1952

1947

Mr. R. U. Harmon, Assistant Regional Forester, U. S. Forest Service, presented a talk in which he stressed the indiscriminate cutting of pole (Ponderosa Pine) stands for poles and pulpwood which could seriously threaten the future supply of sawlogs. Mr. Harmon asked the Board to consider the plan of securing legislation to prohibit promiscuous cutting of pole stands or pole trees of ponderosa pine. This could take the form of regulatory measures which would require the approval of the State Forester before any stands of pole trees of Ponderosa pine be cut. He further stated there would be exceptions to this such as for land clearing for agricultural purposes and other circumstances which would benefit the public as a whole.

No action was taken by the Forestry Board requesting legislation to this effect. The concensus was that here in Montana the sawlog industry being a small portion of the State's economy, this could easily be termed "special interests legislation" while in other states whose economy is largely dependent on the timber industry, it would be for the good of the State as a whole.

Mr. Clarence Strong of the U. S. Forest Service was a visitor at the 1947 annual meeting. He informed the Board of the important developments in the administration of the Clarke-McNary Act. The formula used for apportioning the federal allotment to states provides that one-half is apportioned on the basis of the estimated cost of protecting State and private forested watershed lands, and the other half on the basis of actual expenditures by the states and private owners. The allotments take the form of reimbursements for funds spent by the states and private owners. It is to be noted that the Clarke-McNary law provides that the reimbursement cannot exceed one-half of the total spent for legitimate items.

The Norris Doxey Act was brought to the attention of the Board. Under this Act cooperative assistance is given to the states in aiding farmers and other small forest owners. Montana has one such project; however, it is 100 percent federally supported. As this program is supposed to be on a dollar matching basis between state and federal government, it was brought to the attention of the Board that the federal program will be discontinued soon if the state does not elect to contribute its share.

The Board went on record to support the Norris Doxey work and to make an effort to have the Legislature approve the cooperative share to continue this cooperative forestry work.

This was not approved by the Legislature and the Norris-Doxey program was eliminated in the State of Montana.

1948

The Board was apprised that the Norris-Doxey program had been terminated in Montana by the federal government.

1949

The Cooperative Farm Woodland Management Act was brought to the attention of the Board and it was explained to this body that in order to qualify for cooperative governments funds in this connection it would be necessary for the State to match the federal funds. The Board approved the recommendation to include in the State Forester's budget for the following biennium an item of \$10,000 to cover the State's share of the cost of two farm woodland management projects.

The request for these funds was not granted by the Legislature.

Mr. Strong recommended that a State-wide fire prevention committee be appointed to give more emphasis to this work. This was taken under advisement by the Board; however, no action was taken by this group.

1950

The Governor did appoint a State-wide fire prevention committee during the interim between the annual meetings of the Board, and at this meeting requested and secured approval of this action.

Dr. C. W. Waters explained to the Board members that Montana is not furnishing the farmers enough technical assistance in the phase of woodlot management in the western portion of the State, nor in the shelterbelt plantings and windbreak plantings in the eastern part of Montana. It was further explained that the biggest problem is to eliminate the windbreak problem. The State does not have the necessary funds to employ qualified men to perform this task. The cooperation of the government through the Farm Woodland Management Act with the State participating in appropriating funds would be of tremendous help in correcting many of the adverse situations on farms in Montana. The Board again went on record approving that the sum of \$10,000 be allocated for this work and that this request be put in either the University's or State Forester's budget.

It was brought to the attention of the Board the sale of the State-owned Nyak tract of forest land in Glacier National Park, comprising 640 acres for the sale figure of \$36,531.60.

The Board was also informed that the State Board of Land Commissioners approved the sale of the remaining State land and timber in Glacier National Park to the National Park Service for the valuation of \$520,000.

This, of course, required legislative action and inasmuch as the federal government requested that federal funds be matched before the State could be reimbursed for the property, no action was taken during the Legislative Session.

The funds received by the State from the sale of timber was discussed as to whether a portion of these moneys could be expended for reforesting any part of the State's cut-over area. It was explained that the Enabling Act and the State Constitution provides that all funds received from the sale of lands or timber be invested in securities and the interest therefrom be expended by the several State institutions in questions.

1951

The Chairman of the Keep Montana Green Committee presented a talk to the Board on the progress made by this Committee. Between eighty and ninety thousand circulars and pamphlets have been distributed to the public during this past year. This printed material is of a fire prevention nature. Volun-

tary contributions from industry have been received to promulgate this program; however, it is primarily public spirited work.

The Coordinator of the Montana Rural Fire Fighters Service reported to the Board on its work. This service was set up in 1942 when the President of the United States requested that a movement be promulgated whereby rural administration be organized against destructive fires. Prior to this inception the fire control work was administered through the U. S. Forest Service and State agencies. However, there were large areas in Montana with no protection whatsoever. This organization became very successful in its work and the law enacted known as the County Control Law, made it possible for counties to enter into a program of fire control and cooperate with various agencies to assist in carrying out the fire protection program. This law also gave the county commissioners the power to issue edicts on "closed areas" during the fire season.

A talk was given by a representative of the Bureau of Entomology and Plant Quarantine on the control of insect infestation in the forests. Control measures are now being taken by air-spraying the epidemic areas on the defoliator infestations; however, direct ground work control is used for the bark beetle. It was emphasized that the only solution to the insect problem is one of prevention rather than control, and this must come through intensive management. Roads must be kept open so that the infested areas may be reached quickly and the problem eliminated. Public Law 110 provides that the Secretary of Agriculture cooperate with the states in the control of forest insects.

It was reported to the Board at this meeting that the State is preparing to make an up-to-date appraisal of the value of the State-owned timber in Glacier Park and likewise, the federal lands which are going to be given in lieu thereof. The Legislature authorized the State to exchange this land for other federal lands.

A member of the Washington Office of the U. S. Forest Service explained to this body that the cooperative program of tree planting and farm forestry could still be accepted by Montana if the State would appropriate sufficient funds to meet its share of the cost, which funds have never been appropriated by the State Legislature.

1952

The matter of prison labor being used in the Forestry Department was discussed. This labor would be used for work such as tree planting, road, trail and improvement maintenance on State lands and slash disposal on both State and private lands where the State is responsible. It was explained the State law is set up so prison labor may work on State-owned land, may work on any project within the walls. No action was taken by the Board on this, as this was simply a matter of information for the members.

STATEMENT OF APPROPRIATIONS AND EXPENDITURES
OF THE MONTANA STATE BOARD OF FORESTRY

Fiscal Year	Appropriation	Expenditures
1947	None	
1948	\$1,000.00	\$ 860.08
1949	1,000.00	1,139.92
1950	1,500.00	1,500.00
1951	1,500.00	1,500.00
1952	1,500.00	1,500.00
1953	1,500.00	1,500.00

FORESTRY BOARD COLLECTIONS AND ALLOCATIONS FROM F. Y. 1947 THROUGH 1953

Total Collections		Helena Forest	Lolo Forest	Flathead Forest	Kootenai Forest	Cabinet Forest	State of Montana	Indian Service	N.M.F.A. B.F.P.A.
F.Y. 1946 Assess.									
Collected F.Y. 1947	\$21,004.80	\$ 436.25	\$ 6.25	\$2,142.91	\$2,993.79	\$1,358.60	\$1,029.71	\$ 552.39	\$5,896.37
Deduct: Refunds	78.72	24.57		25.20					28.95
Admin. Cost	1,689.53	35.11	52	172.39	240.81	109.31	82.84	44.28	474.28
Net Allocated F.Y. 1947	\$19,236.55	\$ 376.57	\$ 5.73	\$1,945.32	2,752.98	\$1,249.29	\$ 946.87	\$ 508.11	\$5,393.14
F.Y. 1947 Assess.									
Collected F.Y. 1948	\$25,101.82	\$ 338.09	\$19.01	\$2,240.13	\$3,066.00	\$1,360.57	\$1,373.29	\$ 498.12	\$6,583.75
Deduct: Refunds	28.46			8.82	10.03				9.61
Admin. Cost	1,220.68	16.44	93	108.93	149.10	66.16	66.78	24.23	320.16
Net Allocated F.Y. 1948	\$23,852.68	\$ 321.65	\$1808	\$2,122.38	\$2,906.87	\$1,294.41	\$1,306.51	\$ 473.89	\$6,253.98
F.Y. 1948 Assess.									
Collected F.L. 1949	\$25,110.64	\$ 326.29	\$ 9.11	\$2,566.07	\$3,181.39	1,672.24	\$1,321.76	\$ 513.73	\$7,217.11
Deduct: Refunds	43.62			4.80		30.64			8.18
Admin. Cost	736.36	9.56	26	75.25	93.30	49.04	38.76	15.07	211.64
Net Allocated F.Y. 1949	\$24,330.66	\$ 316.73	\$ 8.85	\$2,486.02	\$3,088.09	\$1,592.56	\$1,283.00	\$ 498.66	\$6,997.29
F.Y. 1949 Assess.									
Collected F.Y. 1950	\$29,308.46	\$1,345.73	\$ 9.49	\$2,619.24	\$3,007.02	\$1,357.68	\$1,757.15	\$ 707.21	\$8,240.70
Deduct: Refunds	1.96								1.96
Admin. Cost	354.80	16.29	12	31.70	36.40	16.44	21.27	8.56	99.76
Net Allocated F.Y. 1950	\$28,951.70	\$1,329.44	\$ 9.37	\$2,587.54	\$2,970.62	\$1,341.24	\$1,735.88	\$ 698.65	\$8,138.98
F.Y. 1950 Assess.									
Collected F. Y. 1951	\$29,454.85	\$1,347.03	\$13.44	\$2,564.25	\$2,885.46	\$1,646.55	\$1,659.46	\$ 708.12	\$7,976.57
Deduct: Refunds	45.12	45.12							
Admin. Cost	720.85	32.98	32	62.75	70.62	40.30	40.60	17.33	195.21
Net Allocated F.Y. 1951	\$28,688.88	\$1,268.93	\$13.12	\$2,501.50	\$2,814.84	\$1,606.25	\$1,618.86	\$ 690.79	\$7,781.36
F.Y. 1951 Assess.									
Collected F.Y. 1952	\$36,462.22	\$1,915.21	\$14.33	\$3,660.94	\$4,724.98	\$2,740.10	\$1,878.46	\$ 973.72	\$8,901.36
Deduct: Refunds	18.36					18.36			
Admin. Cost	462.72	24.31	18	46.45	59.96	34.77	23.83	12.37	112.97
Net Allocated F.Y. 1952	\$35,981.14	\$1,890.90	\$14.15	\$3,614.49	\$4,665.02	\$2,686.97	\$1,854.63	\$ 961.35	\$8,788.39
F.Y. 1952 Assess.									
Collected F.Y. 1953	\$36,662.65	\$2,167.34	\$14.28	\$3,684.10	\$4,436.12	\$2,888.88	\$1,879.76	\$ 991.29	\$9,051.52
Deduct: Refunds									
Admin. Cost	455.00			56.62	161.18	19.65	33.72	11.93	171.47
Net Allocated F.Y. 1953	\$36,207.65	\$2,167.34	\$14.28	\$3,627.48	\$4,274.94	\$2,869.23	\$1,846.04	\$ 979.36	\$8,880.05
									43
									\$11,548.93

EXECUTIVE COMMITTEE

MONTANA RURAL FIRE FIGHTERS SERVICE

GEORGE W. GUSTAFSON, State Coordinator

1947

R. B. TOOTELL, Chairman
Director of Montana Extension Service
C. S. CROCKER, Member
U. S. Forest Service
THOMAS L. CARTER, Member
Regional Forester, U. S. Office of Indian Affairs
W. C. LUBRECHT, Member
Montana State Board of Forestry
ERNEST H. SANDBERG, Member
Soil Conservation Service
RUTLEDGE PARKER, Member and Secretary
State Forester

1948

Same as above
Additional member:
GEORGE H. SNELL, Member
Bureau of Land Management

1949

R. B. TOOTELL, Chairman
Director of Montana Extension Service
ALFRED SPAULDING, Member
Asst. Regional Forester, U. S. Forest Service
THOMAS L. CARTER, Member
Regional Forester, U. S. Office of Indian Affairs
W. C. LUBRECHT, Member
Montana State Board of Forestry
ERNEST H. SANDBERG, Member
Soil Conservation Service
HORACE E. JONES, Member
Bureau of Land Management
RUTLEDGE PARKER, Member and Secretary
State Forester

1950

Same as 1949

1951

Same as 1950

1952

H. F. Root replaced W. C. Lubrecht (deceased)

1953

George Neff replaced H. F. Root as member representing
Montana State Board of Forestry

MONTANA RURAL FIRE FIGHTERS SERVICE

1947 - 1953

To apprise the reader of the inception of the Montana Rural Fire Fighters Service, the following relates a brief history of this organization. This organization succeeded the Montana Forest Fire Fighters which was set up in 1942 for the purpose of organizing of rural America for defense against destructive fires. As a result of the successful operation of this group, the State Legislature in 1945 enacted a rural fire law entitled "An Act to provide for the protection and conservation of range and forest resources, prevention of soil erosion, rural fire control under authority of boards of county commissioners, appointment of county rural fire chiefs and district rural fire chiefs, organizations of rural fire control crews, appropriation of funds from the general fund of the county or to levy a tax and to enter into cooperative agreements for fire control." This law made it possible for an even greater control program in the prevention and suppression of rural fires. At the organization's annual meeting the executive council elects a coordinator to carry on this important work, and to determine policies, and also to elect an executive committee for the ensuing year.

1947

Conditions in Montana during 1947 were more favorable for fires than for some years. Loss from fire was greater than in 1946. This was due to the heavy growth of grass resulting from the favorable moisture and growing conditions during the growing season. All this provided tremendous fire hazards in August and September.

The problems and difficulties encountered in the development of an effective rural fire control program are self-evident and are as follows:

1. Large expanse of grazing and crop land needing protection.
2. Arid climatic conditions and comparatively few natural barriers to assist in preventing the spread of fires.
3. Sparce population and comparatively few rural telephones.
4. Combustible material adjacent to trans-continental highways and railroads where danger from man-caused fires is relatively great.
5. Large numbers of groups, agencies and county units that must, through teamwork, coordinate their efforts into a well-rounded program if duplication and lost effort is to be avoided and maximum results obtained from efforts expended.

To overcome the above listed problems and difficulties it was necessary to build and create closer cooperation, and the development of a sense of responsibility in rural fire control and a keener consciousness of fire hazards.

The methods and procedure used were the following:

- A. Publicity and education.
- B. Standardization of equipment.
- C. Complete county organizations.

With respect to "A," every means available were used to carry the story of fire prevention and suppression. The press, radio, extension news letters, Boy Scouts, meetings of the 4-H clubs, home demonstration clubs and many other groups have been utilized to disseminate information. Ports of entry were

provided with fire prevention material that was handed to out-of-state visitors as they entered Montana.

Standardization of equipment was emphasized in order to make the volunteer freely familiar with the equipment he would be using, no matter in what vicinity he was called upon for fighting a fire. This standardization process is in the form of education with groups attending fire-fighting schools and becoming accustomed to the sort of equipment they will be called upon to use. The coordinator has advised the county agents of the most adequate and adaptable equipment for purchase by the various counties.

Concerted effort was made by the Coordinator of the Service to establish complete county organizations in every county in Montana. Progress has been made in this scheme. This is a constant program of education to receive the maximum in effectiveness through each and all counties concerned.

The total equipment now available throughout the counties on a voluntary basis total 6,084 pieces of equipment.

1948

All counties in the State have reported organized programs in fire control and protection for 1948. Among these, fifty-three counties have set up organizations under the Montana Rural Fire Control law, which provides for the appointment of county fire chiefs and district fire wardens by the Board of County Commissioners.

There was an increase of 149 members on county fire boards from 1947 to 1948. The county commissioners have also exercised the law in creating closed fire areas during the fire season.

Other communities are studying the possibilities of organizing fire control districts where fire protection is inadequate. This type of fire prevention and control fits into the pattern where an unincorporated town through cooperation with the adjacent farming community can provide fire protection for both urban and rural areas.

Approximately \$70,000 was expended in the purchase of new and repair of old fire fighting equipment by counties, districts and private cooperators during the past two years. A total of 2,334 pieces of fire protection equipment was added for fire control work in all the fire protection agencies within the State. This makes a total of 6,084 pieces of equipment available for the suppression of fires.

At the annual meeting of the Montana Rural Fire Fighters Service, it was requested that the Extension Service institute an education program in rural fire protection. Suggestions to further educational work have come through the County Agricultural Planning committees at meetings held in all the counties. Consequently all county extension workers have devoted much time to this project and have made it a part of their plan of work. Numerous fire prevention programs were conducted at home demonstration clubs throughout the State. These clubs have selected project leaders to be trained by state leaders to carry on prevention work among the members of their clubs. Radio programs, newsletters, moving pictures, safety posters, booths and demonstrations all played an important part in the fire prevention program and developed a keener sense of responsibility on the part of all concerned with the saving of lives and property.

In order to bring the youth of today in sharper focus of the fire prevention program, the Service put on a demonstration in grass and forest fire control at the 4-H Conservation Camp and other youth organizations. Booths were set up at various county and district fairs which depicted fire prevention and suppression in the general safety displays.

Three special events bearing on fire control during the year was given emphasis and called: Farm Clean Up Week (May), Farm Safety Week (July) and Fire Prevention Week (October). Special posters, news items and radio programs gave these events special mention.

The monthly newsletter, "Rural Fire Flashes," was prepared and mailed each month to the list of over 200 representatives of member agencies and other cooperating associations. The newsletter contained items of interest in the field of fire protection and control and a summary of fires which occurred which were reported by county agents. Information on fire fighting equipment is included in this newsletter and other valuable data on safety measures and fire hazards.

1949

The coordination and educational efforts in fire prevention and fire control during the past year has been carried on along the following phases:

A. The cooperation of agencies has been accomplished through letters, personal contact in counties and meeting with county boards of commissioners, fire committees and fire chiefs.

B. Twelve district coordinators were appointed during the past year, with each coordinator representing one of the cooperating agencies. Conferences have been held where plans, policies and procedure in carrying out fire control programs in each respective district have been promulgated.

C. Better organization has resulted in talks with various boards of county commissioners. This effected a better county fire control program. There are now 54 county and district fire chiefs. These boards established 26 different closed seasons during the year. The total money appropriated in 1949 was \$20,335, which is the largest amount on record for such purpose by the largest number of counties—28 in all.

D. The local community and county fire control work has been accepted during the past year as indicated by the increased interest in fire control committee meetings and county/or community training meetings. All counties in the State reported meetings being held to discuss and plan the fire control program. District coordinators conducted demonstrations in the use of fire fighting tools and equipment and the organization of the fire fighting crews.

E. Maps have been prepared by county agents and fire control committees giving information regarding names and locations of all key men in the fire control organization; they also indicate the location and content of tool caches and other fire fighting equipment available for action.

The Rural Fire Flashes, a monthly newsletter, now reaches approximately 300 individuals. This publication gives timely warning on fire prevention and general information regarding the rural fire control program.

Visual aids, such as films and slides, proved very effective this year, and their use will be accentuated even more in the future. This is another good means of publicity and education to couple with the regular press releases and radio announcements.

1950

Since the inception of the Montana Rural Fire Fighters Service, considerable heavy and light equipment has been purchased by the counties, and the average annual burned area has been greatly reduced through the action of organized volunteer crews. A state-wide meeting is held once a year and attended by all organized federal, state and county agencies which comprise the membership.

Every county, with the exception of two, in the State has provided fire protection under the authority vested in the Board of County Commissioners by the rural fire control law. Large sums of money have been invested in fire fighting tools and equipment. Local fire fighting crews have been organized and trained in methods of fire fighting. Closed fire seasons have been established during the seasons of the year of dangerous fire hazards.

Volunteer fire prevention and control committees are now organized to promote the fire control program within the counties. A system of reporting all rural fires has been in use now for four years. These reports eventually reach the State Coordinator, and a monthly and annual summary is kept. The reports give the nature of fires, causes, losses and volunteer fire fighters and estimated savings effected through work of fire fighting crews and use of tools and equipment.

The success of the Montana Rural Fire Fighters Service can best be measured on the county level.

The Board of County Commissioners and the county organizations form the basis on which the work of fire protection and control must be carried. The effective county organization with a well organized fire control program is dependent on the cooperation of all agencies interested and capable of contributing to it. How well this has worked out is indicated by the fact that 54 out of Montana's 56 counties have put one or more features of the county rural fire control law into effect; the other two counties have fire protection and control facilities provided by other means.

Growing interest in the Service is observed on the part of farmers and housewives due to their attendance at demonstrations on the use of fire fighting tools and equipment.

The motion pictures on fire prevention and control have been used freely throughout the State, and with over one hundred showings, it has been reported that over 7,000 persons viewed these educational films.

Seventeen training schools and demonstrations for county and district fire chiefs were held during the year, attended by 453 volunteer fire fighters. In addition, 105 meetings were held at which fire prevention and control were discussed with an attendance of 2,319 persons.

The Montana Rural Fire Fighters Service coordinated many of its activities with the newly launched "Keep Montana Green" program. This program is aimed at fire prevention and protection of farm, range and forest lands, as well as farm homes and buildings.

Property losses due to fire in 1950 were about one-third the losses of 1949. The climatic differences between the two years accounted for some savings; however, better organization, more equipment, better trained crews and greater vigilance on the part of all rural people had much to do with this great reduction.

The counties appropriated \$21,600 for the fire control program for 1950. This money was used for the purchase of fire fighting tools and equipment. The most important equipment added this year were 13 fire fighting trucks for use in small towns and rural areas of the State.

1951

A close relationship between Civil Defense and the work of the rural fire fighters was established through organizational meetings of both groups through-

out the majority of counties during this year. The Service has placed at the disposal of the Director of the Civil Defense program its complete list of fire fighting tools and equipment available in rural areas.

A project known as Wildland Operational Fire Plans was set up during this year. The objective of this project is to provide coordinated and mutual aid for fire suppression action by all forest and range fire protection agencies to hold fire damage below the level at which it would seriously interfere with national defense and to do the job at the least cost. Data and information were compiled on which to base such a plan in the 34,000,000 acres of the State lacking the service of State or federal fire protection agencies.

The "Keep Montana Green" program has proved a valuable ally in fire prevention through publicity and education. The program received much publicity and proved a valuable asset to the Service in its use of publicity and educational literature.

Additional publicity was realized in connection with Spring Clean Up Week, National Farm Safety Week, and National Fire Prevention Week. Radio and press cooperation proved an excellent means in promoting these programs.

Training schools in which demonstrations in methods and techniques in suppressing and controlling range fires were held in twenty-one counties. The 4-H clubs and home demonstration clubs throughout Montana have remained actively informed on fire prevention and fire hazards.

County participation progressed in 1951 with every county except one reporting on work being accomplished in fire control. In all counties progress has been made in one way or another. An increased number of counties have established closed fire seasons.

Local fire districts have been organized in several counties which indicates a trend in the desire for more intensive fire prevention and control on the part of the rural population.

1952

From the standpoint of fire, the situation during 1952 was more serious than it has been for a number of years. An extended drought, continuing from early July until late in the fall, resulted in extreme fire hazards over the entire State. The equinoxal conditions which usually come in September in the form of snow and rain, did not materialize this year; hence the prolonged fire season.

In spite of these conditions, Montana was exceptionally free of any widespread forest fires. Many fires were reported but none really got out of control. The largest forest fire reported covered 800 acres.

Several comparatively large prairie or range fires occurred in the eastern part of the State, particularly in the northern tier of counties. A total of 120,000 acres were burned in this area. One fire, which consumed 90,000 acres, occurred in November at a time which is usually free of hazardous fire conditions. This fire is reported to have been caused by a cigarette or match being carelessly thrown.

Closed fire seasons in many counties were extended beyond the usual time and extra precautions were exercised on the part of all fire protection agencies. Everyone seemed to be more alert and cautious in fire prevention and control.

The preparation of all the cooperating fire protective agencies in the State, plus a larger number of volunteer fire fighters with more and better fire fighting equipment, combined to make it possible to keep damage to a minimum.

A more intensified program of fire prevention and control is provided through the organization of local fire control districts as provided by law. Such districts are set up on a basis whereby they may be supported through taxation on petitioning of boards of county commissioners. Many are organized on a voluntary basis supported through contributions and voluntary services.

The Montana Rural Fire Fighters Service has continued its policy of giving assistance and cooperation to the Civil Defense program in Montana. The plan, identified as Annex II Fire Service, is a standby organization in case of emergency. The purpose is as follows:

- A. To provide for the organization, integration, utilization, and direction of the fire-fighting resources of the State in time of grave fire danger under the Montana State Fire Defense Plan, after an emergency has been declared by the Governor.
- B. To delegate responsibility and to establish a mutual understanding of the authority, responsibility, function, and operation of the various municipal, fire district, rural fire-fighters, State and federal fire-fighters resources, and private organized forest fire protective districts located within the State.

Three special weeks are set aside each year in observance of fire prevention and control. These weeks are: Farm and Home Clean-Up Week, National Farm Safety Week, and Fire Prevention Week. Volumes of publicity material to urge and help in the observance of these special weeks have been provided by federal and private organizations concerned with fire prevention and control. This material is distributed by the Service. Radio and news releases also played an important part in having the public made aware of these special observances. One of the most important functions of the Montana Rural Fire Fighters Service is to develop a fire consciousness on the part of the general public. This is best accomplished by publicity and education. There is no measure on which to yardstick the invaluable aid of the publicity and education in this work; however, many fires which never started can be attributed to this Service. Constant reminders and continuous warnings to the public regarding fire hazards can not be established in a dollar and cents savings, yet it is an established fact that these warnings have been of unestimable value.

More films have been added for visual education in this work. The U. S. Forest Service "Smokey the Bear" song has been adopted by the 4-H clubs as a theme song. This popularity has been of great value in putting over the Service's fire protection message to the youths here in Montana.

The Rural Fire Flashes has increased its mailing list to over 1,200 co-operators. This publication keeps fire fighters informed, interested and on the alert.

The State is divided into twelve districts for convenience in carrying out the program of fire prevention and control. A coordinator is appointed for each district to promote the program.

The extent of participation by counties in the fire prevention and control program is indicated by the money that has been appropriated during the past year. This amounted to \$47,556.70. This includes \$24,949.70 which was raised through direct tax levied on property in three fire control districts in Carbon county.

Thirty counties declared closed fire seasons and fourteen counties reported

holding fire fighting and organization training schools. Nearly all the counties in Montana have fire control committees.

Fifty-three of the counties have county-wide organizations as provided under the county fire control law.

In an effort to establish similar or identical fire fighting equipment in all the districts, a fire tool box was designed to house fire fighting hand tools. These plans were distributed to the district fire chiefs in the counties.

Continued cooperation is both given and received by the cooperating agencies. More equipment and better trained personnel supported by a more fire conscious public will combine for greater protection and readiness to meet the rural fire situation.

No drastic changes in the fire prevention and control program for Montana are contemplated by the Montana Rural Fire Fighters Service. Plans which are now in force will be intensified. The real need is that the rural population be educated on how to prevent and control fires. There is still a real need for more educational work on organization of fire protection organizations and methods of protection. More fire fighting equipment is necessary in all communities. Education in the use and kind of fire equipment to have is an essential part of the Service's campaign. Safety education is a prime factor to be incorporated in all of the educational programs of the Montana Rural Fire Fighters Service.

1953

The general fire situation in farm, range, and forest land was more threatening than ever, but fire losses were less than they have been since 1950.

In 59 grass fires reported, only 13,304 acres of range and crop land was reported as burned during the year, valued at \$49,117.00. In addition, 1,258 tons of hay, valued at \$26,845.00 were burned. The loss in farm homes and buildings totaled rather high during the year. In comparison with the past five years, 1953 ranked third in property loss and fourth in the number of fires.

The ultimate objective of all the combined efforts of rural fire prevention and control is to hold the number of fires started down to a minimum, suppress those fires that start before they get out of control and reduce losses. The results obtained through these objectives during the past year fully justifies the existence of the Montana Rural Fire Fighters Service.

The Service has devoted its efforts to promote and coordinate this activity into a more efficient over-all fire prevention and control program. The work carried on during the past has emphasized education, publicity and organization to the end that a greatly expanded program of fire prevention and control would result over the State.

All the counties in the State have established a program of fire prevention and control under the law enacted in 1945, which provides for the organization of local fire control districts.

Thirty-one schools and demonstrations were held to train district fire chiefs and volunteers in fighting grass and range fires during the year, with about 500 individuals in attendance. Locally, all the county extension agents are devoting much of their time and work to the fire control program and were responsible largely for the success of these schools.

Greater emphasis on fire prevention publicity material was given to the fire control program in 1953, and greater use was made of the material provided. The newspapers cooperated liberally in printing the fire prevention display mats.

Extensive distribution was made of fire prevention posters and other material provided by the U. S. Forest Service. The press and radio carried fire protection warnings as they have never done before. Fire prevention films were used liberally through the year by rural farm, home and youth groups. Stencils in the form of slogans were painted on the highways stating ““Prevent Forest Fires” and “Prevent Range Fires.”

The “Rural Fire Flashes” is assuming an important role in education and is now being mailed to approximately 1,200 interested agencies or individuals.

The Montana State Highway Department cooperated in giving publicity to the “flipper law.”

The State Fish and Game Commission cooperated to alleviate the fire hazards during the fall by changing the hunting seasons, and it was this precautionary measure that contributed materially to the low number of fires during the year.

The U. S. Forest Service’s “Smokey Bear” has aided immeasurably in securing the interest of the youths in getting across our educational work in fire prevention.

Money appropriated by the counties in 1953 totaled \$35,923.00. Eight counties appropriated the full amount authorized under the law, viz \$2,500.00 each. A total of 16 fire trucks was added this year, making a grand total of 126 fire trucks now available for rural use in addition to the use of town and city trucks available for emergency use. Eleven trailers were also added during the year, increasing this type of equipment to about 50. Closed fire seasons were established in 30 counties during the year.

Through the Civil Defense Administration, a total of \$11,012.55 was appropriated to counties and communities on a matching basis to apply on the purchase of fire fighting equipment, except trucks, in rural areas. This makes a total of \$46,935.00 spent by counties and communities.

FUNDS AND EXPENDITURES OF MONTANA RURAL FIRE FIGHTERS SERVICE

Fiscal Year	Budget** Set-up	Clarke- McNary (Proposed)	State Appropriated (Actual)	Expended (Actual)	Salaries	Travel	Operation
1947	\$ 5,600.00	\$ 5,600.00*	\$ none	\$ 2,555.77	\$ 1,748.90	\$ 403.52	\$403.35
1948	3,400.00	1,900.00*	1,500.00	1,891.38 1,499.98	1,317.49 1,499.98	481.39	92.50
1949	3,400.00	1,900.00*	1,500.00	1,842.76 1,500.02	1,506.71 1,254.61	218.55 245.41	117.50
1950	3,925.00	1,675.00*	2,250.00	1,689.87 2,250.00	1,428.89 1,796.11	260.98 453.89	..... .....
1951	3,975.00	1,725.00*	2,250.00	1,683.30 2,250.00	1,327.61 1,771.87	355.69 478.13	..... .....
1952	4,175.00	1,925.00*	2,250.00	1,966.87 2,250.00	1,703.13 1,947.39	221.04 302.61	 42.70
1953	4,175.00	1,925.00*	2,250.00	1,968.74 2,250.00	1,395.60 2,079.40	573.14 92.30	 78.30
	\$28,650.00	\$16,650.00	\$12,000.00	\$25,598.69	\$20,777.69	\$4,086.65	\$734.35

*Includes \$75.00 contribution of Fish & Wildlife Service.

**Budget based on work and financing division as follows: 50% State, 50% Montana Extension Service.

I. SUMMARY OF ALL RURAL FIRES DURING 1947 - 1953

Year	No. Units Burned	Estimate of Value Loss	No. Vol. Fire Fighters	Estimated Saving
1947	293	\$382,931.00	2025	\$523,280.00
1948	280	560,493.00	2144	599,500.00
1949	385	987,950.00	4190	605,635.00
1950	160	390,830.00	1248	231,200.00
1951	158	621,944.00	2575	153,900.00
1952	174	650,022.00	1643	72,600.00
1953	194	527,812.00	1917	110,000.00

II. SUMMARY OF ACREAGE OF CROPS AND RANGE LANDS DURING 1947 - 1953

	Acres	Estimated Loss
1947	33,809	.....
1948	40,576	.....
1949	134,296	\$268,592.00
1950	2,910	7,275.00
1951	17,718	44,291.00
1952	107,922	214,492.00
1953	13,304	49,117.00

III. SUMMARY OF HAY LOSSES DURING 1951 - 1953 (Previous years unavailable)

	Tons	Estimated Loss
1951	982	\$ 29,460.00
1952	1,376	43,270.00
1953	1,258	26,845.00

IV. SUMMARY OF FARM HOMES AND BUILDINGS BURNED DURING 1947 - 1953

Year	No. Units Burned	Estimate of Value Loss	No. Vol. Fire Fighters	Estimated Saving
1947	61	\$223,700.00	333	\$ 50,675.00
1948	140	445,080.00	569	200,500.00
1949	170	665,285.00	1191	223,050.00
1950	111	299,475.00	730	82,200.00
1951	152	541,000.00	1148	Not available
1952	157	379,010.00	714	46,220.00
1953	135	451,850.00	397	110,000.00

V. SUMMARY OF SEMI-RURAL FIRES DURING 1951 - 1953

(Previous years unavailable. Included in farm homes and bldgs.)

Year	No. Units Burned	Estimate of Value Loss	No. Vol. Fire Fighters	Estimated Saving
1951	25	\$1,008,300.00	407	.....
1952	38	327,320.00	149	.....
1953	46	406,865.00	347	\$ 69,000.00

VI. SUMMARY OF LIVES LOST DUE TO FIRE DURING
1947 - 1953

1947	6
1948	7
1949	15
1950	3
1951	16
1952	9—1 hospitalized
1953	2—4 hospitalized

STATE PARKS

The period covered by this report commences with July 1, 1946, and ends on June 30, 1953. As of July 1, 1953, the Legislature in its 33rd session abolished the State Park Commission and transferred its duties to the State Highway Department.

The following persons served on the State Park Commission during this period:

1947: Frank Carey
Walter Neils
P. J. Sweeney

1951: Basil Brooke
Francis Cross
Jack M. Vickery

1948: Frank Carey
Walter Neils
P. J. Sweeney

1952: Basil Brooke
Francis Cross
Jack M. Vickery

1949: Jack Vickery
Francis Cross
Basil Brooke

1953: Basil Brooke
Francis Cross
Jack M. Vickery

1950: Francis Cross
Basil Brooke
Jack M. Vickery

The State Forester, Rutledge Parker, served as the Secretary of this Commission during this time, in accordance with the laws of Montana, Chapter 48, Laws of 1939.

The Thirteenth Annual Report of the Office of the State Forester included a report on the State Parks in Montana. This portion of the report listed certain potential areas for the development of state parks, and this report will concern itself with relating the status of these potential developments and will attempt to report briefly on the progress and work accomplished in these areas. A second part of this report will be a financial table showing the moneys appropriated by the Legislature, the deficiency appropriations, and the funds in the special park fund established for the income received from the Lewis and Clark Caverns State Park.

1. **LEWIS AND CLARK CAVERNS STATE PARK.** This park covers 2,735 acres and is located near Whitehall, Montana. These lands were given to create this park by both public and private agencies. No funds were expended to acquire any of the lands. The Caverns are open to the public four or five months during the year, depending on weather conditions. Improvements in the cave are a never-ending problem as the paths traversed by the public must be made as safe as possible. Due to its limestone formation this construction work is a necessary project to facilitate the public's desire to visit the caverns. There is a road of a little more than three miles which, with the assistance of the Highway Department, makes the area leading to the Caverns a fine scenic drive. The information building at the turn-off from the main highway houses many fine geological specimens, fossils and minerals. A concession building is in operation, a railroad is operated to transport tourists to the entrance of the cave.

Admissions charges to the Caverns are of a sufficient stature to maintain the Park on a self-sustaining basis. The moneys received from this source are placed in a special revolving fund; however, the Legislature has placed a maximum figure on what may be expended from this source. The remaining moneys remain in this fund to be used at the discretion of the Legislature.

2. **YELLOW BAY STATE PARK.** This park consists of 15 acres located on the shoreline of Flathead Lake near Big Fork. The area was set aside for recreational use for the public by the Legislature; but the land which includes this area was deeded to the University of Montana by the Federal Government to establish a biological station. A road has been constructed leading down to the shoreline of the lake and a small parking area has been bulldozed. There are several picnic tables for the public's use, and also public toilet facilities. This area is not only popular during the summer season but is used extensively in the fall for salmon fishing.

3. **GOOSE BAY STATE PARK.** This park area comprising 45 acres on Flathead Lake near Kalispell, was leased by the State of Montana Park Commission for a sum of \$1,800 yearly rental. This operation continued for a period of approximately three years, and in that time no income had been derived from its operation, so the Park Commission agreed unanimously to abandon the site and this area is no longer a part of a venture to develop State Parks. The decision to cancel the lease on this area was an economic one, in that the lease did not give the State the right to apply the rental to an established purchase price. In order to put this area in operation for the public a considerable outlay in finances was necessary on the part of the State, and as no income was derived from any public privileges, it was decided to expend no further funds on this venture.

4. **GATES OF THE MOUNTAINS STATE PARK.** This area comprises approximately 200 acres near Helena. This is a potential site for a park, and although the Legislature did appropriate a certain sum of money for its acquisition (along with certain lands adjacent to Lewis and Clark Caverns State Park) no purchase of land was consummated. This area still remains a potential site. No action was taken on this land either prior or during the period of which this report is concerned.

5. **BRIDGER MOUNTAINS STATE PARK.** The State owns forty acres of this land, located nearby to Bozeman. The State Park Commission had an additional 920 acres on an option-purchase agreement; however, funds were not available to exercise this agreement. This area was intended primarily for a ski course and winter sports area, but has not been developed to the extent that the public can benefit from these activities. The funds that paid for the forty acres acquired by the State were what the Legislature appropriated for the area of the Gates of the Mountains State Park and Lewis and Clark Caverns State Park. A road to Bridger Mountains State Park was built, however repair work is needed if the public is to be able to make use of it and the Park.

6. **HELL CREEK STATE PARK.** This is a State park in name only, as the 200 acres of this area, located near Jordan, is a part of the Fort Peck Reservoir. The U. S. Army Corps of Engineers has given the State authority

for the public to use this area, and in return for this privilege the State employs a custodian during the seasonal months. There have been picnic tables placed there, and the usual facilities necessary to keep an area in good condition.

7. **ROCK CREEK STATE PARK.** This area of approximately 200 acres is located on Fort Peck Reservoir, near Circle. The same conditions exist on this site as at Hell Creek State Park.

8. **THE PINES STATE PARK.** This area of approximately 300 acres is located near Glasgow on Fort Peck Reservoir. The same conditions exist on this site as at Hell Creek State Park.

9. **MISSOURI HEADWATERS STATE HISTORICAL SITE.** This area of approximately 75 acres is located near Three Forks. The State has been deeded an eight-acre tract of land for park purposes. No funds have been allocated to purchase any of the lands surrounding the State area. No improvements have been made on this area. It is possible that in the future this area could be a noteworthy park, due to its historic value, in connection with the Lewis and Clark expedition.

10. **MACO SICA STATE PARK.** The area of approximately 10,000 acres is and has been a potential State park. These surroundings, near Glendive, are commonly referred to as the "Bad Lands." The State does not own any property within this area and no development has been attempted.

11. **BANNACK STATE PARK.** The area is erroneously called a State Park, although its historical significance is of such a nature that restoration of the town and area should be of special value to the State. The State has no title to the 25 acres located near Dillon, and no development work has been accomplished.

12. **INSCRIPTION CAVE STATE PARK.** There are two principal caves in this 26-acre site in the rimrocks south of Billings. This site was received from the State Highway Commission. The floors of both of these caves were excavated by WPA workmen to recover artifacts. The collection was housed in a museum built in a natural ampitheatre formed by rimrock. Vandalism has rendered this building and the surrounding points of interest in complete disrepair. No funds were spent on this park, and no progress has been made.

13. **BITTERROOT LAKE STATE PARK.** The State Park Commission fell heir to approximately thirty acres of land near Kalispell through the abandonment of the area by the National Youth Administration. Inasmuch as funds were not available to maintain this property properly, the Lions Club at Kalispell has been given the use of the grounds for the purpose of organized camping by the youths of the State, in return for the custodial care given the Park. No improvements have been made by the State on these grounds.

FINANCIAL STATEMENT OF STATE PARK COMMISSION APPROPRIATIONS, DEFICIENCY APPROPRIATIONS AND INCOME AND INCOME SPENT FROM LEWIS AND CLARK CAVERNS STATE PARK

Fiscal Year	Appro- priations	Deficiency Appropriations	L & C Income	Income Allowed To Be Spent	Money Spent From L & C Income
1947....	\$ none	\$.....	\$14,301.59	\$ all	\$15,219.60
1948....	10,000.00	.....	23,603.34	all	23,775.69
1949....	14,376.63	4,376.63	26,046.80	all	26,058.52
1950....	**49,225.00	.....	21,854.75	all	21,490.76
1951....	46,165.00	.....	26,788.30	all	27,157.12
1952....	16,750.00	* 19,553.12	20,965.00	15,000.00	15,000.00
					***4,391.95
1953....	16,750.00	.....	28,922.79	15,000.00	.....
				- 4,391.95	25,009.36
				**** 9,138.56	
				**** 5,262.75	
				<u> </u>	
				\$25,009.36	

- * This deficiency actually occurred in 1950 as the State Park Commission was advanced a like sum of money from the 1951 appropriation and was consequently in arrears during 1951.
- ** From this appropriation the sum of \$3,000 was earmarked for the purchase of lands and improvements at Lewis and Clark Cavern and at Gates of the Mountains.
- *** This amount was advanced from the L & C income to close out bills long overdue.
- **** These moneys were established in the Park Fund; however, these moneys, according to the Board of Examiners ruling, should not have been placed in the account; hence they were removed to reimburse the concessionaire at L & C Caverns State Park and the U. S. Treasury Department for the twenty percent collection on tickets sold.

STATE PARK COMMISSION STATEMENT OF APPROPRIA- TIONS AND EXPENDITURES

From July 1, 1947 through June 30, 1953

F.Y. 1948		
Appropriation 7/1/47 through 6/30/48.....		\$ 10,000.00
Expenditures 7/1/47 through 6/30/48:		
Salaries and Expenses.....	\$ 9,999.22	
	<u> </u>	
	9,999.22	
Carried forward to F.Y. 1949.....	.78	
	<u> </u>	
	\$ 10,000.00	\$ 10,000.00
F.Y. 1949		
Appropriation 7/1/48 through 6/30/49.....		\$ 14,376.63
Carried forward from F.Y. 1948.....		.78
		<u> </u>
		\$14,377.41

Expenditures 7/1/48 through 6/30/49:

Salaries and Expenses.....	\$ 14,377.41	
	<u>14,377.41</u>	
Reverted to General Fund.....	0.00	
	<u>\$ 14,377.41</u>	<u>\$ 14,377.41</u>

F.Y. 1950

Appropriation 7/1/49 through 6/30/50.....		\$ 69,225.00
Expenditures 7/1/49 through 6/30/50:		
Salaries and Expenses.....	\$ 65,771.34	
Land and Land Improvements.....	3,000.00	
	<u>68,771.34</u>	
Carried forward to F.Y. 1951.....	453.66	
	<u>\$ 69,225.00</u>	<u>\$ 69,225.00</u>

F.Y. 1951

Appropriation 7/1/50 through 6/30/51.....		\$ 45,718.12
Carried forward from F.Y. 1950.....		453.66
		<u>\$ 46,171.78</u>
Expenditures 7/1/50 through 6/30/51:		
Salaries and Expenses.....	\$ 46,171.66	
	<u>46,171.66</u>	
Reverted to General Fund.....	.12	
	<u>\$ 46,171.78</u>	<u>\$ 46,171.78</u>

F.Y. 1952

Appropriations 7/1/51 through 6/30/52.....		\$ 17,209.50
Expenditures 7/1/51 through 6/30/52:		
Salaries	\$ 10,459.50	
Operation	3,741.99	
Repairs and Replacements.....	2,970.89	
	<u>17,172.38</u>	
Carried forward to F.Y. 1953.....	37.12	
	<u>\$ 17,209.50</u>	<u>\$ 17,209.50</u>

F.Y. 1953

Appropriation 7/1/52 through 6/30/53.....		\$ 16,290.50
Carried forward from F.Y. 1952.....		37.12
		<u>\$ 16,327.62</u>
Expenditures 7/1/52 through 6/30/53:		
Salaries	\$ 9,540.50	
Operation	3,758.01	
Repairs and Replacements.....	3,029.11	
	<u>16,327.62</u>	
Reverted to General Fund.....	0.00	
	<u>\$ 16,327.62</u>	<u>\$ 16,327.62</u>

